

AD-A286 985



FINAL TECHNICAL REPORT
FOR
MODULAR WORK TEAMS
AT
MARYLAND CLOTHING



CHARLES GILBERT ASSOCIATES, INC.
Management Consultants

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Building Tomorrow's Success Through Today's Innovation.

FINAL TECHNICAL REPORT
FOR
MODULAR WORK TEAMS
AT
MARYLAND CLOTHING

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Install Modular Manufacturing Work Teams at a DAM, Phase II

**Sponsor: Defense Logistics Agency
PPFG T1-P1, Phase I**

Principal Investigator: Robert L. Lowder

Charles Gilbert Associates, Inc.

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EXECUTIVE SUMMARY

The PPFG T1-P1, Phase II, Short Term Project conducted by Charles Gilbert Associates, Inc. at the New Maryland Clothing Company implemented the remaining Modular Manufacturing Work Teams to manufacture Army Dress Uniform Coats. The Principal Investigator believes the implementation to be a success beyond expectation views the project.

CGA personnel continued to train the management, supervision, and employees of Maryland Clothing in Modular principles, completed the plan to convert the entire plant, and implemented the final five teams. Originally, the plan was to convert six additional teams; the decision to change to 5 is covered in detail later within this report. These teams are functioning with fewer problems than in Phase I, and they are delivering better than expected results.

The metrics used to show the differences before and after implementation are all positive. Some, such as Actual Man-hours Per Coat, Throughput time, and Morale are far better than anticipated. All other metrics are in good range. No metric is in negative state. The overall evaluation of the project is good. It is above the minimum needed to keep things at the present level. Especially, with the management of Maryland Clothing assuming more of a leadership role and follow-up, so that CGA could complete the setup of all the modules. Phase II definitely benefited from the experiences in Phase I. The leadership of Maryland Clothing management was key to its success.

INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

1.0 INTRODUCTION

1.1 Purpose, Scope, and Objectives

The PPFG T1-P1, Phase II, short term project conducted by Charles Gilbert Associates, Inc. at The New Maryland Clothing Company continued the process of changing the manufacture of Army Dress Uniform Coats from conventional line concepts to Modular Manufacturing Work Teams. Phase II of the project installed teams at the start of the manufacturing process to Baste Under collar, which completed all operations through Final Inspection. Five teams were covered in Phase II. The primary objectives of the project were to continue to show that Modular Team concepts can be successfully implemented in tailored clothing manufacturing, that the elapsed time to make a tailored garment can be greatly reduced, and that the monetary benefits outweigh the costs.

1.2 Source and Method of Evaluation

In order to test the progress of the project, certain metrics were identified and tracked during the project. The metrics came from payroll, personnel, and shipping documents prepared by Maryland Clothing during the normal course of their business. Comparison of data before the project began to that at the end of the implementation of the project provide the measurement of success.

1.3 Report Organization

This report reviews the basic concepts of Modular Manufacturing and the adaptation of those concepts to the Army Dress Uniform Coat. The implementation process is described through basic steps with references to timeline. The results section notes actual accomplishment measured against the Maryland Clothing metrics. An evaluation of this project compared to other projects is presented to help in grading the project.

2.0 DESCRIPTION OF MODULAR MANUFACTURING WORK TEAMS

2.1 Definition of Modular Manufacturing Work Teams, "Modules"

Modular Manufacturing Work Teams are defined by the American Apparel Manufacturers Association as a group of 5 to 17 people working together to accomplish an assigned assembly process. The team is assigned machinery, other assets sufficient to complete the process, and authority to make certain decisions. Members are cross-trained to the extent practical to keep product flowing smoothly. Payment to the team is based upon completion of first quality units.

Modules work best when an entire assembly process can be assigned to the team, but modules can be linked in various ways. One method of linking is end to end, where one module feeds another, etc. A second method allows a single module to feed certain components to multiple modules doing subsequent process steps. While a single module allows for the fastest throughput time, many products are so complex that a single module might need to be too large to retain the "closeness" of a good team or may require members to learn more operations than is practical. Typically, the more complex the product, the more likely modules are to be split or linked.

2.2 The Basic Types of Modules

There are two basic types of Modules popular in apparel manufacturing... Batch and Single Piece Processing. Both are used successfully, although, Batch modules are more numerous than Single Piece.

Single Piece Processing means that a single garment is passed from operation to operation individually. This type of processing was popularized by Toyota Sewing Systems during the middle 80's. It is characterized by team members who stand while working, many more machines than employees, and constant movement of members between operations. Each team member has only one piece of work in hand. As a unit is completed, the member moves to the next member and relieves him of his unit. This member moves back down and relieves the next, etc. This process is sometimes referred to as "Bump-back" or "Bumping". The time to process one unit is very short. It normally exceeds standard time by only a small amount, so the throughput time for a single unit is typically minutes as opposed to weeks on conventional methods. The cost to process a single unit may be less than that of a conventional system, but not by much. Since the system forces members to move, there is less problem in getting people to move, and thus there is less need for formal training in how to work in this type module. There is, however, a significant offset to the reduced classroom training. Members typically must learn far more operation steps than in conventional or batch processing. This being the case, performance may actually suffer compared to conventional means. Machinery is normally arrayed side-by-side in a horseshoe approach. The amount of space required per employee is normally greater than conventional systems. Machine-member ratios are rarely less than 2:1 and are as high as 4:1. This ratio coupled with the need to convert machinery to standing make the initial investment much higher than conventional methods.

The *Batch System* of processing allows for a small supply of work between operations. Normally, the amount of work between operations is much less than in conventional systems. This small amount of work in process means that members need to move less frequently than with Single Piece systems. While a conventional system may have a goal of 2 -3 hours of process between operations, a batch module might have 10 - 30 minutes at most. Most batch systems allow for members to sit and perform operations in similar fashion to conventional systems. Layouts of machinery can be in horseshoe, side-by-side, front to back; "Y" shaped, or even circular. The layout fits the product, flow of work, and components added. There is usually less square footage per machine. Since training and switching are minimized with the Batch approach, performance is generally better. Machine-member ratios are approximately 1.25:1, and rarely go beyond 1.5:1. This means that the batch systems require less machine investment than single piece modules.

2.3 Batch System of Module Selected for Maryland Clothing

The *Batch System* of work was selected for use at Maryland Clothing for several reasons. There was little need to reduce throughput down to minutes or even hours, since shipments are normally made on a weekly basis. The extreme difficulty of the product and the high degree of skill needed on many operations made the need to limit cross training desirable. The lack of space played a part in the decision. The need to work within the confines of large pieces of pressing equipment made the flexibility of layout with the batch system more attractive.

It was decided to link teams end to end rather than have any two or more teams do the same tasks in parallel. Initially, 10 teams were selected. However, during Phase II the number of teams was changed to 9, due to several opportunities to combined skills within a team, to utilize similar equipment & layout, to take advantage of method & construction changes, and to assign subassembly

responsibilities to appropriate teams. The teams averaged about 11.5 members and about 12 to 18 operations.

The following table demonstrates the differences in the Plan vs. Actual:

Team	Plan	Plan %	Actual	Actual %
<u>Number</u>	<u>Members</u>	<u>SAM's</u>	<u>Members</u>	<u>SAM's</u>
Six	12	18.9	15	23.4
Five	12	17.1	15	19.6
Four	11	18.3	13	20.8
Three	9	12.6	12	18.9
Two	12	15.6	12	17.4
One	<u>11</u>	17.5	--	-----
	67		67	

3.0 IMPLEMENTATION OF THE PROJECT

3.1 Planning the Project

As with all Modular Manufacturing Projects, initial planning is needed. The planning for this project entailed learning all the operations, learning about the payroll policies, learning the cost structure, learning some of the key quality points, learning how work was presented to sewing by cutting, learning the background and experience of all the key personnel at Maryland Clothing. Once all this was done, the management, supervision, and selected direct employees were brought into the planning process.

3.1.1 The Steering Committee

The steering committee was formed from personnel at Maryland Clothing that included the manager, supervision, and certain sewing employees. This group

was given indoctrination about different ways to implement modules. Once the indoctrination was completed, this group spent time answering questions about how they felt modules would best work at Maryland Clothing.

3.1.2 The Questions That Formed the Module Outline

There were many questions that CGA has developed over its years of experience that when answered form the outline of how a company would like to see modules work. CGA played a key role in making sure that the answers to the questions would be compatible with Modular concepts. Among this list of questions are:

- Should the teams sit or stand?
- Should the teams be paid upon completion of all work, or for first quality only?
- Should team members earn the same pay?
- What goals do you want to accomplish with the implementation?
- How much work should be between operations?
- The steering committee answered all the questions. Their answers were then presented to the owner of Maryland Clothing. The owner of Maryland Clothing made the final decision about how things would be done with the advice of CGA. Once the outline of how modules should work was decided, CGA moved on to training and dividing the floor into modules.

3.1.3 Dividing the Sewing Floor into Modules

The Army Dress Coat presented many more challenges to CGA in dividing the floor into teams. Firstly, the sheer number of operations was enormous, 123. The number of people performing the operations was 111. CGA personnel spent more time than normal to look at each operation that had to be performed on the coat. CGA did a cycle study on each operation, drew a basic footprint of each operation, talked to each employee about their operation and skills, and

analyzed the payroll results against the cycle and the standard. This knowledge made it possible to divide the process into logical parts that could be put together to form modules.

Included with this report are several exhibits that will further explain the process of developing modules for Maryland Clothing. To show how the floor was divided into nine modules, Exhibit I, MODSPLITS, is presented. This shows the expected efficiency of each team member and their primary assignments based upon the operation(s) the team member most often performs. This Bid Worksheet provides a good starting point to judge whether or not a team will have enough potential to earn their previous level of earnings or if additional help will be needed in order to complete the number of pieces targeted.

During the first phase of the project, CGA deemed it prudent to go through the entire plant to make an initial split of all teams. In doing this, several mistakes were avoided. First, this work led CGA to put parts assembly with the module that added the small part to the main or trunk assembly. Second, a spec change occurred, eliminating the cuff finish. This change, plus method changes during Phase II, affected modules in Phases I and II. Since there was good knowledge of all operations, the change was incorporated with little loss to initial planning time and implementation time. Third, an initial plant layout was done to prove space was sufficient to complete the project. The final layouts for all the teams of Phase I & II are illustrated as Exhibit XII (12 pages).

3.2 Team Training

3.2.1 Team Classroom Training

Once the Module outline or plan was completed, CGA began the process of training individual team members in a classroom setting. The training sessions were conducted on an overtime schedule, because Maryland Clothing could not

afford to lose any production. In many cases, other employees also worked overtime in order to make up for losses from the group being trained.

Exhibit II, Team Member Training Outline, shows the general training topics in CGA's team member classroom training program. While not every topic is taught to every group, the basics are taught to every group. Roman numerals V and XIII were not taught to every team. The others were taught each of the topics.

The Team Member Training Manual is supplied under a separate cover. It includes all subject materials taught by Charles Gilbert Associates, Inc. Some of the material was not taught directly to the team members, but was included as additional background material.

3.2.2 Lost Labor

It became obvious during the initial training sessions that Maryland Clothing was not going to be able to afford the training of their employees. The project was in jeopardy of being canceled by Maryland Clothing. A modification of contract was secured to reimburse Maryland Clothing for the overtime premium and variable fringe benefit costs of the training required to insure success of the project. Exhibit III, Analysis of Potential Lost Labor, documents the method of calculation and the total anticipated. In fact, training time exceeded that which was sought in the modification.

The lost labor cost for Maryland Clothing was budgeted to be \$35,263 for Phase I. This amount was actually spent and more. Although, no formal records were kept of dollars in excess of the budgeted amount, it is estimated that an additional \$15,000 of expense was incurred by Maryland Clothing. For all practical purposes, this served as a cost match on their part. This makes the actual lost labor cost of training over \$50,000 for the first four teams. In Phase II, the lost labor was budgeted \$60,218 for the final five teams, with Maryland

Clothing agreeing to Cost Match 50% or \$30,109 of the actual lost. The actual amount spent for lost labor during Phase II was less than projected. Maryland Clothing spent \$37,865.72. The half value of this is \$18,932.86. The reason for the lower expenditure is that Maryland management took steps to align the workforce ahead of going to modules. This included cross training based upon earlier alignment.

3.2.3 On-floor Training, Drills

Once a team has established its member's primary assignments, it is necessary to test the team and see where help is needed. This is done through drills conducted by CGA. The drill seeks to put the team in a module-like environment. Excess work in process is removed, and the team is asked to operate as a module for a period of time, initially at 2 hours. The time for the drill grows as the Team can grow its ability to keep the work moving.

During the drill CGA records the work done on each operation by each employee. If one operation runs out of work, the employee is asked to move to another operation that needs help and which they know. If an operation is overproducing, the employees are asked to move to a job that needs help.

Cycle times are made on each employee on all the operations they perform during the drill. The cycle times are used to reinforce each team member's potential on each operation as well as provide a base line for future improvement after cross training.

3.2.4 Classroom Training, Bidding

After enough drills have been performed to show the team members where their strengths and weaknesses are, CGA puts the team through a second bidding session. This is done in the context of what would have made results better in drills. Team members can see the operations that are in need of help, the team

members who have time available (normally from stronger operations), and can see what training will be needed.

3.2.5 On-floor Training, Cross-training

The thing that makes modules work is team member's abilities to learn additional operations and perform them as the team needs. The success of a module can be directly traced to how well team members learn the skills on operations upon which they are weak, and how well they move or shift responsibilities to keep the work moving at its most optimum level.

Normally, teams can learn all the operations requiring help. That has not been the case at Maryland Clothing. There are some operations that are extremely difficult. These operations require extreme amounts of particular skills for which machinery or attachments do not exist to aid the training process. The training curves are quite long, up to six months, and there is a high incidence of failure to learn these skills. At Maryland Clothing, these operations have been found around the armhole area. Teams 7 and 8 have the majority of them. No matter how much training has been done, the team members still need help on these operations when one member is absent. When this occurs, Maryland Clothing uses Utility Employees to take up as much of the lost capacity as is possible.

3.3 Use of Utility Employees

Utility employees are employees with skills on a large number of operations. Maryland Clothing employs three people in this capacity. These people sometimes do several operations in a single day. Their skills generally are sufficient to do a good quality job, but may not be good enough to earn a sufficient wage for the utility employee. In order to keep these people, Maryland Clothing has guaranteed them an hourly wage.

When Utility employees are used to replace missing team members, the team must give up the value of the work the Utility employee does for them. This is their contribution to the Utility's pay. Maryland Clothing makes up the difference between the piece rate money earned by the Utility and the hourly guarantee of the Utility.

Since the modules are now on a group incentive, the demands upon the Utility employees are growing. This growth in demand is group pressure being brought to bear upon the Utility to produce more. Since the Utility is hourly paid, this is obviously a potential conflict. In order to alleviate this situation, CGA has proposed a split incentive system for Utility employees that will allow them to earn more, if they perform better. This is in keeping with the belief that some Utility employees know more, do more, and, therefore, are entitled to more money than they are currently paid.

Exhibit IV, Proposed Split Incentive, Utility Employees, shows the three methods proposed to the management of Maryland Clothing. The method that will be used is still in being considered by Maryland Clothing.

3.4 Payroll Procedures

NOTE: In order to preserve Maryland Clothing's sensitive pay rates, piece rates, etc. the following is based upon the exact process of conversion, but uses amounts that are not necessarily the same as now being paid by Maryland Clothing. Payroll Manual for Modular Work Teams, which offers in detail payroll procedures, is published under a separate cover.

The task of converting Maryland Clothing from a true piece rate shop to a group based incentive program has not been simple. Payroll procedures at Maryland Clothing have been built around a computer program that is limited and with the ability to use different conversion factors for different employees.

CGA operated on the basic principle that as long as group output in SAH or SAM was the same as the cumulative amounts previously contributed individually, then no one in the team would lose money. If the group did more, they would all earn more. If the group did less, they would all earn less. In order to make this a reality, CGA did the following things.

3.4.1 Establishing Old Earnings Levels

The average used for the first groups was the average used to pay benefits such as vacation and holidays. This immediately revealed some problems. Certain employees were now doing considerably more than they had previously done. This was due in part to increased skill and effort and sometimes to the presence of more work. The answer to this problem was to basically negotiate an appropriate average for each employee. This allowed the management of Maryland Clothing to set performance levels that were more indicative of how the individuals were actually performing immediately before being put into teams.

3.4.2 Converting Old Earnings to Performance

In order to work through this process using an example, the following metrics are now introduced for this example:

Old Earnings Level: \$ 10.00

Conversion Rate: \$6.00

Old Hourly Bonus: \$ 1.00

Once average was obtained, CGA then converted each average to the percentage of standard performance for each individual. This conversion had several steps because, at Maryland Clothing, each employee had a "conversion rate". This was used to change minute values at standard to a piece rate for the employee. As an example, if an employee had a conversion rate of \$6.00 per hour, it meant that one minute of her time was worth \$0.10. If an operation had a

standard allowed minute value of 3.000 per unit, the employee would be paid \$0.30 per piece for each piece completed.

In addition to an individual conversion rate, the employee also might have had an hourly bonus amount they were paid in addition to piece rate. These amounts ranged from nothing to over \$1.00 per hour for employees who were long serving and highly skilled. The second step was to take the previous paid average earnings and subtract from it the bonus amount. From our example above, \$10.00 minus \$1.00 bonus means that the employee earned \$9.00 per hour in piece rate money.

The final step in converting pay to performance was to divide the hourly piece rate money earned by the conversion amount. From our example, \$9.00 earned per hour divided by \$6.00 conversion rate, means this employee performed at 150% of standard.

Each individual's contribution to the team was determined using the same three steps. Once everyone in the team had been determined, the entire group's performance levels were averaged. This was the level of performance the group would need to average in order to earn the same as their previous earnings. This was in keeping with the basic premise of dealing with individuals fairly.

3.4.3 Developing a Group Conversion Rate

In order to develop a group conversion rate, CGA had to make several things fit together. Firstly, the desired average earnings of the factory were kept in mind. For our example, the assumption is made that Maryland Clothing needs to pay \$8.00 per hour to the average employee in order to keep the caliber of employee needed to make its type of apparel. Secondly, the average bonus paid per hour is now \$0.50 per hour. This means that Maryland's employees earned \$7.50 per hour in piece rate earnings. Thirdly, the actual piece rate performance of the

plant was needed. Let's suppose that the average conversion factor at Maryland Clothing was \$6.77. This means the average real performance at Maryland Clothing is about 111% efficiency.

It was decided to use a conversion rate of \$6.50 per hour. This was to keep as many people as possible from having to have a negative adjustment to pay (this is explained later in the report), The alternatives ranged from \$6.25 to \$7.00 per hour. During Phase II, a contractual increase, \$0.20 per hour was added to the Base making it \$6.70. This was added to the base rather than to the individual adjustments. This allows those modules who are above 100% performance, all of them, to reap more than \$.20. This also keeps the amount out of the "guaranteed" status.

3.4.4 Converting Old Piece Rate Values to Group Piece Rate Values.

The creation of piece rates on a group basis required analysis of the old piece rates and the addition or deletion of certain elements of work that were added or deleted. The process required that each operation be compared before and after team implementation. Any changes in the work elements brought about by the team process would then be adjusted into the standard time for each operation.

The biggest single source of change in time values was due to the elimination of some of the bundle handling time. This was mainly due to eliminating unnecessary handling of bundles caused high in process. Other differences were due to changes in the operations themselves. There was a net decrease in SAMS per piece.

Once the SAM values were adjusted, they were then extended by the new group conversion rate of \$6.70. This resulted in the total pay for each coat produced by the team. This is also known as the group piece rate. By manipulating the piece rates, SAM values, old performance efficiency, and old earnings levels it is

possible to predict how many pieces will be produced by the team, and how much it will pay them in piece rate earnings.

3.4.5 Incumbent Adjustments, Need, Calculation and Negative Amounts

With a single conversion rate of \$6.70, which is less than the previous amount, and a wide variation in previous earnings, it was expected that actual piece rate earnings on new piece rates would be less than the amounts previously earned by team members individually. This meant that a method had to be developed to bridge the difference for those already on the payroll.

The method chosen is to subtract the expected hourly piece rate earnings of the group from the expected earnings of each team member. The difference is called an incumbent adjustment or incumbent allowance. Each team member has their own incumbent adjustment, because no team members previously earned the same amount. This incumbent adjustment would be paid to each team member for every hour they worked. By adding this amount to the hourly amount earned from piece rates, the total pay per hour for each individual can be maintained.

Because some employees had previously low earnings, their incumbent amounts are negative. This is done to insure that they do not get a pay increase just by going into a team. Any pay increase will come to them just like every other team member, by completing more pieces and earning more piece rate money.

The door is left open for those who now have negative incumbent allowances to perform better and have that amount changed upward to zero. Also, those whose performance and effort change substantially, (either up or down) can have their incumbent allowance adjusted.

3.4.6 Spreadsheet to Make Payroll Computations

No payroll policy or procedure is good unless it can be executed consistently and presented in a way that is understood. The payroll program used by Maryland Clothing, while excellent when used as it was designed, is not capable of making the necessary group calculations in order to pay the team members as needed. The system is capable of taking gross pay information and converting it to net pay, etc.

In order to present to the payroll system those items needed to pay the team members CGA built a series of spreadsheets using Microsoft Excel. These spreadsheets are combined into workbook format so that an entire week's activity for a module is resident on one file. Exhibit V, Untitled, is a simulation of the payroll for one of the teams, which has changed significantly since Phase I. Daily publishing of Team's performance, plus intra-networking of submitting daily and/or performance scenario information for a Team.

Exhibit V, page 1 is the Daily Performance Sheet which can be published daily for each Team. This is a really good motivation tool, because the Team knows how they are doing each day while situations dictating their performance and pay are fresh on their minds. Plus, if there's any miscommunications in the payroll calculations, then it can be resolved immediately. The Team is able to see their \$'s per hour for each day, and the average pay for the week. Since only, each Individual knows their Incumbent adjustment then technically the sensitivity of publishing individual's pay rate is removed. Each Team will know the number of units for which they were paid, any \$'s added to or taken away from their PW \$'s and the total hours that Team members worked.

Exhibit V, page 2, is the weekly summary sheet for the team. There are several main parts to the sheet. The top 1/3 of the sheet is devoted to how the pay is divided among the individual team members. The figures presented are in dollars and are cumulative for the week. The right side of the upper section of

the sheet shows the individual's timework average; the weekly earnings per hour, expected earnings and the hourly difference between expected and earned. Everyone on a Team should have the same difference per hour because it is compared to its expected performance, which has been calculated according to the team's performance. The far right column is to manually enter any Individual performances; this is for managerial purposes only.

The center part of the sheet is used to summarize the essential performance data of the team. This includes Units Produced (960), Hours on Standard (184.00), Units per Hour (5.22), Team Performance (115.9%), the Actual Cost per Unit (\$1.772), and Std. Cost per Unit (\$1.769). Plus the Total Cost for the Team (\$1700.94) broken down by PieceWork \$'s (\$1490.88), Incumbent (\$192.16), Off Std \$'s, Transfer Excesses (\$17.90) which is the difference between the pay and earned \$'s of someone transferred into the team, along with Make up & OT premium \$'s, and Misc. \$'s.

The lower 1/3 of the sheet is devoted to adding on different amounts for each team member. These include any make-up, overtime premium, or other adjustments, such as Non-Team earnings.

Exhibit V, pages 3 & 4, are the daily sheets, there are six of sheets per week Monday through Saturday. These present the team's performance and pay data for a single day. Page 3 shows an unprotected viewing of the daily sheet, which is available on the plant's network. Page 4 shows the protected view of a Daily sheet, which shows pay sensitive information. (Page 2 the Summary and page 5 Incumbent Adj. Sheet are both protected.) The payroll split data is located on the left side of the sheets with any transferred \$'s included at the bottom. The right side is devoted to collecting and comparing Individual's earnings, actual output data and metrics with key historic indicators. This data is intended for management use.

Exhibit V, page 4, shows that the team completed 480 pieces that day. The extension of this by the piece rate (\$1.553) means the team earned \$745.44 in group piece rate. Subtract the coupon value (\$62.10) that a Utility did because one team member did not work that day. Leaves \$683.34 actually paid to the Team split by 88.00 hours which is equal to \$7.77 per hour, \$0.20 per hour over the Expected earnings.

Exhibit V, page 5, the Incumbent Adj. sheet shows the essential information about this team's conversion from individual piece rate and individual bonus to group piece rate and individual incumbent adjustments. The process is easily followed. The key to conversion is to multiply the old efficiency level of the team (113.00%) by the new base rate (\$6.70). This means the team will split \$7.571 per hour if they are as productive as before. Once the Incumbent Adjustments are established, then the team's old efficiency is locked so if any one Incumbent is changed the others will remain constant. The net affect of all the additions or subtractions is to get each individual back to their original average by using an incumbent allowance.

4.0 SCOPE OF PHASE I & PHASE II

Phase I of the project covered four modules of ten expected to be implemented. These 4 modules took the garment from Basting the Under Collar to Completely Finishing the Coat. Phase II was to cover from the Start of Sewing to Basting Under Collar which would be the remaining six modules. As explained earlier, Phase II was changed to five modules but covering the same areas of the plant as planned. Exhibit VII pg. 1 & 2, Summary of Phase II Module Scope & Summary of Phase I Module Scope, shows the metrics of each Phase for all nine modules. There were 38 people covered in Phase I and 67 in Phase II for a total of 105. There are a total of 120 operations, 33 in Phase I and 87 in Phase II. Of these only 3 operations have a population that exceeds 2 people. Sleeve Set

requires over 3 team members and Pull Basting requires over 4 people, while Sew Gores requires over 3.

Normally, modules would have something like 1.5 people per operation. In the case of Maryland Clothing, Phase I, the ratio is 1.2 people per operation and Phase II the ratio is 0.77. This is a very big difference than normal.

The benefits of Phase I had spilled beyond the original scope. There was already an increased activity level in the other parts of the plant. This made going into Phase II a better process, but the percentage of improvements in this group may not be as good as Phase I, because they were already performing at a better level in some cases.

5.0 RESULTS OF PHASE I & PHASE II

5.1 METRICS USED TO DISCUSS RESULTS

Exhibit VI, Phase I & II, Key Performance Benchmarks, is a graphical capsule presentation of the metrics. The original proposal for the project set forth several benefits of going to Modular Manufacturing work teams. The metrics explained in later sections are presented to support the benefits of quicker order turn time, lower costs, reduction of inventory due to faster turn, and better employee morale.

5.2 Days in Plant

The first metric detailed is the number of working days a bundle of garments takes to get through the plant. The total days includes Cutting, all Sewing, Pressing, and Finishing.

In September of 1996, before any work was begun on the project, Maryland Clothing was taking an average of 18.5 days to cut, sew, press, and finish a

bundle of work. In June of 1997, the end of Phase I, the time for this was down to 13.8 days. This is a reduction of 4.7 days or 25.4% of the original time. In June of 1998, the end of Phase II, the time was down to 8.5 days a reduction of 10 days or 54% of the original time.

In September of 1996 it was taking 12.7 days to process work through sewing. By June 1997 the time to sew a bundle had been reduced to an average of 8.1 days. This is a 4.6 days reduction or 36.2% of the original time. Virtually all the reduction in throughput time had come from the area affected by Phase I. By June 1998 the time to sew a bundle reduced to 5.5 days another 2.6 days reduction. There has been a total reduction of 7.2 days or 56.7% in the time to sew a bundle.

5.3 Pieces Produced Per Week

Pieces produced per week, is an attempt to convert average daily performance to that of a full week. The actual number represents the average daily pieces finished multiplied by five. The result is a full week's production.

During the period around September of 1996 the plant produced an average of 1,985 pieces per week. During May of 1998 the plant produced an average of 2,405 pieces per week. This is an increase of 420 pieces per week or 20.7% of the original metric. As teams continue to improve in performance Maryland Clothing may want to consider raising production which will result in larger contracts and quicker turns.

5.4 Work in Process

The Work in Process, WIP, is defined as the number of pieces cut, but not finished. The total is for the entire plant. During September of 1996 there were 8,116 pieces cut but not finished. In June of 1997 the number of pieces in process had fallen to 6,602. This is a reduction of 1,514 pieces or 18.7% less than the original amount at the end Phase I. The work in process at the end of Phase II in June of 1998 was 3,422 a reduction of 4,694 pieces in the levels before modules. An actual reduction of 139% in the current wip levels.

5.5 Actual Hours Per Coat

NOTE: IN ORDER TO PROTECT MARYLAND CLOTHING'S PROPRIETARY DATA, THE FIGURES BELOW ARE ALTERED. THEY DO REFLECT ACTUAL PERCENT OF CHANGE.

The truest test of cost reduction is the actual hours worked per coat. The figures are based upon the actual hours per coat produced by the modules. The overall hours per coat are down significantly. Payroll documents were used to get the

total hours worked. Shipping documents were used to get pieces produced. By dividing hours worked by coats produced, the average hours per coat were calculated. If the hours prior to beginning the modules were stated to be 1.000 per coat then in May 1998 the actual hours per coat produced would be 0.869, a reduction of 13.1%. This is a true productivity increase.

Productivity increases generally lead to lower cost. In Maryland Clothing this was no exception. If the dollars per coat prior to modules were sated to be \$1.000 then in May 1998 the actual dollars per coat produced would be \$0.903, a reduction of 9.7%. The cost didn't decrease proportionally as much as productivity increased, because the earnings per hour has increased as modules were installed, and Maryland Clothing had a contractual obligation to increase their base rates by \$0.20 per hour in October 1997.

5.6 Throughput, Actual Hours

The time to process a bundle through all the operations without rushing the bundle ahead is called Throughput Time. It is obtained by totaling all bundles in and ahead of the modules. This total is divided by the average hourly output of the teams. The result is the number of hours it would take a new bundle, just beginning the process, to be completed.

The metric is stated before, after, and at goal for teams in Phase I and non-teams, which became teams in Phase II, as well. Before modules were begun, the throughput for Phase II areas was 43.2 hours. The goal for CGA would be 24.0 hours for this group. The actual time during June 1997 was 54.0 hours. This was an actual increase in time to complete the bundles. This is also seen as a key indicator that this part of the operation was having a difficult time keeping up with Phase I as non-teams. The activity level was up significantly, but the actual results were not as good as the module areas. However, by the

end of Phase II in June 1998 the throughput was 33.6 hours, which is higher than the goal but a decrease 20.4 hours since the start of Phase II.

The area covered by Phase I had an actual throughput time of 28.8 hours. The goal for this area was 16.0 hours. The actual throughput time in June 1997 was 10.8 hours. By the time Phase II was completed the throughput for Phase I was down to 6.9 hours.

The goal for throughput time for both Phases I & II was 40 hours, Phase I is 9.1 hours better than the goal, and Phase II is 9.6 hours higher than the goal which makes the throughput at 0.5 hours over the goal or 40.5 hours through sewing. As the Teams of Phase II continue to improve like Phase I did then the throughput should be better than the goal.

5.7 Morale Increase Indications...Turnover and Absence

Two metrics that are typically used to measure job satisfaction and morale are the plant's turnover of employees and the amount of time missed or absent. Maryland Clothing is extremely good at both absence and turnover due to a very aggressive policy for attendance.

Turnover in the plant during the last three quarters of 1996 was 35.3% of the workforce. Annualized turnover through the first quarter of the 1997 was 48.9% for the non-team area. Incredibly, no one in the area affected by the teams was lost during the first six months of Phase I. Although, it would be impossible to keep turnover at 0%, Maryland Clothing continued to show remarkable results in this area. The last quarter of Phase II, which had 105 team members, only 1 quit was recorded an annualized turnover of 3.8%, which is also incredible. During the six quarters of installation of the modular work teams, there were 10 quits recorded during or after the quarter that the applicable team was ready to go live. Of the 10 quits, only 7 were replaced.

As more of the total population became involved in teams the turnover for the plant decreased steadily. Turnover results are illustrated in Exhibit XI. It seems to be obvious that teammates find reasons to remain, whatever it may be, job satisfaction, increased earnings, or being a significant team member, the results are staggering.

Absence is measured as the difference between hours available (plant schedule multiplied by people on roll and actual hours worked) and actual hours worked, divided by hours available. This is the accumulation of all lost time.

Before modules began, Phase I applicable team's percent of absence was 3.53%. During the period of Phase I, absence for this group was 1.22%. This is a very good sign. 3.53% lost time for all reasons is considered to be excellent. 1.22% is incredible. It was difficult for the entire project to match the result of this first group. However, the weighted average absenteeism for all teams at the end of Phase II was 2.62%, this also considered to be excellent. Since all of sewing & finishing was included on all the teams by the end of Phase II, then it should be noted that in the last quarter of 1996 the total absenteeism was 6.31%. This shows quite an improvement over an already favorable situation.

6.0 EVALUATION OF PHASE I & PHASE II EFFORTS

6.1 Method of Evaluation

Charles Gilbert Associates has implemented Modular Manufacturing Work Teams in many different companies. There are certain things that can be judged from implementation to implementation. Each area of work at Maryland Clothing is compared to the best known implementation done by CGA and the minimum level needed for the best result. Explanations are given for each of the areas. Exhibit VIII is a graphic representation of each area of evaluation.

MAJOR PROCESS STEP OR TASK	BEST KNOWN PRACTICE	MD. CLOTHING ACTUAL PRACTICE
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6.2 TEAM SELECTION *SELF-SELECTION* *WORK RELATED*

Because of the nature of the product and the state of training, true self-selection was not a viable option at Maryland Clothing. With over 150 process steps and around 100 people, there were few options. The entire plant was put into modules, so it was best to let trained skills dictate who was on a team.

6.3 CLASSROOM, TRAINING *REGULARLY SCHEDULED* *AD-HOC, OVERTIME SCHEDULE*

Because of the single population on many operations, when team training took place, it virtually assured that the next operations would run out of work that overtime would result. The classroom training had to be abbreviated and done on an opportunistic basis. This meant that some teams received training out of rotation, because of the need to maintain flow of work. The great variety of cultures in the plant has meant that understanding basic principles is a challenge. For the most part, this has been taken care of through the use of translators and in practical experience.

6.4 ON-FLOOR FOLLOW-UP *SET PERIOD, FULL ATTENTION* *EXTENDED PERIOD, SPLIT ATTENTION*

Normally, one team is begun at a time. This allows everyone to concentrate on a single team's problems and their solutions. Because of the unscheduled nature of training and a spec change that forced personnel changes into one of the groups, on floor follow-up had to be conducted on several teams during the same time frame.

MAJOR PROCESS STEP OR TASK	BEST KNOWN PRACTICE	MD. CLOTHING ACTUAL PRACTICE
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6.5	MODULE PLANNING	<i>DONE PRIOR TO BEGINNING</i>	<i>ON-GOING PROCESS AS REQUIRED</i>
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Module planning determines how things will be done. The process includes training a steering committee and letting them help to make the decisions. This is normally done at the beginning of the project. There were many things that have made the module plan be revised. The first is a change in personnel used to implement the project. Different people see things in different ways. The second is a change in spec that shifted the work content of at least two teams. The last is a major change in payroll application; due to local practices and needs. The payroll policy has undergone several revisions. To a large degree these have settled down, but they could become problems as new situations in team make-up

6.6	TEAM-SELF DEVELOPMENT	<i>FULLY ACCEPTS RESPONSIBILITY</i>	<i>EXPECTS MGT. TO SOLVE PROBLEMS</i>
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With few exceptions, there is a path that all teams follow. In training, it is called the four stages of group development, forming, storming, norming, and performing. There is no set time period for a team to work through all these stages, but there is a direct correlation between these stages and team performance and morale, and ultimately, success.

At Maryland Clothing, five teams are truly to the point of performing. The rest are in various stages. A brief description of where each team stands follows.

Phase I Teams:

"Best of Ten" is in the Performing stage. "Eight is Enough" is in the Performing stage. Both of these teams adapt well to work flow and absenteeism. "Quality Experts" is in the Norming stage. Since they have gotten past blaming

each other, along with personnel, procedures and pay changes they are beginning to perform. Primarily Maryland Clothing's management handled the recovery of this team. **"Finishing Touches"** is in the Performing stage. The new people they have added have solidified the team. Now, they are working with management to re-organize their team to do the same work with fewer hours.

Phase II Teams:

Teams #4, #5 & #6 are in the Forming stage, although these teams have surpassed their previous productivity. They haven't named themselves, and do not completely understand the consequences of their performances and work balancing. It's not unusual to have the last installed teams of a project to be at Forming upon completion of the project. The last team's maturing process is normally monitored by local management, which completes the learning process for everyone. However, with unusual circumstances and untimely developments, all three of these Teams were ready to become Live and start forming as a team on their own at the same time. **Team #6** at one time was the furthest along when there was turnover of 2 key operators. This lengthened the installation time because of extra training. **Team #4's** installation was delayed for method changes introduced to allow for new equipment, which had a few problems that had to be addressed by the mechanics. **Team #5** had construction changes, which delayed their progress just enough to allow **#4 & #6** to coincide with their progression. Given the above situations, it would have been difficult to complete the installations without Maryland Clothing's willingness to take responsibility for these teams. The way these teams have produced very little loss of time is anticipated before these teams are in the Performing stage.

"All 4 One" and **"Maryland's Best"** are in their Performing stage. They should continue to improve although they are already above expected levels. Maryland Clothing's management did a real good job recognizing and solving personality and behavioral problems that minimized the length of the storming stages.

MAJOR PROCESS STEP OR TASK	BEST KNOWN PRACTICE	MD. CLOTHING ACTUAL PRACTICE
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6.7	LEADERSHIP RESPONSIBILITY	FULLY TRANSFERRED
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Most plants take responsibility for leadership at some point in the process. The minimum hope is that plant leadership would be able to keep things going. The best hope is that major changes in process or personnel could still be handled. At this point, Maryland has now taken full responsibility for leadership. In Phase II all responsibility was transferred away from CGA personnel. Maryland Clothing will be able to carry on with the work done to date plus handle new situations as they arise.

The Manufacturing VP and Floor Supervisors have good knowledge about the people's needs. They are working to learn how to make moves that can be of help to the teams. They are very good at moving utility employees between teams, but this has been the extent of the need. The real thing that is missing is the internal coaching of the teams. This is the difference between "line supervision" and "team coaching". This is a new skill for most supervisors.

6.8	TIME PER MODULE	180 Hours	412 Hours
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The time required to convert Maryland Clothing to modules continued to be greater than those of other installations. The time for Phase II modules was even greater than experienced with Phase II. The primary reasons continued to be associated with training difficulties. These were mainly cultural, but also included time for Maryland Management to assume responsibility and to continue to improve the payroll process. Phase II modules have averaged over 500 hours. The manpower loading document, Exhibit X, pg. 1 of 3, shows a total of 2,582 hours expended versus a budget of 2,550. The extra hours have been put into additional on-floor hours with the later teams.

MAJOR PROCESS STEP OR TASK	BEST KNOWN PRACTICE	MD. CLOTHING ACTUAL PRACTICE
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6.9 OVERALL GRADE *On Budget, Ahead of Schedule, High Results* *On Budget, Ahead of Schedule, High Results*

The overall results of the project are excellent. Every major goal has been met or exceeded. Results in productivity improvement are phenomenal when you consider that Maryland Clothing's historic performance has historically been above 100% efficiency. The actual time per unit is down 13%. The units produced are up over 20%. Any way you look at it, this is a striking productivity increase.

Maryland Clothing has historically had excellent turnover and lost time figures. This is solely due to the active and aggressive management of these things. Even absence and turnover are so much better; it is hard to comprehend this improvement.

Without question the project has been very expensive compared to other modular installations. This investment is more than justified when viewed in the light of the reduction in overall inventory levels required when the amount of time to respond to an order is decreased by 50%.

7.0 MODULE FIRSTS AND SIGNIFICANT HAPPENINGS

The completed modular installation marks a number of firsts for Charles Gilbert Associates, Inc. and for Modular Manufacturing. While these may seem insignificant to some, they are very meaningful to apparel manufacturing.

7.1 Linking Modules

There are many instances of linking modules, end to end, in order to produce an entire product. Charles Gilbert Associates has linked as many as three modules in completing the cut and sew processes. Maryland Clothing shows that NINE modules can be linked with excellent results.

7.2 Inclusion of New Equipment

Maryland Clothing added some new and innovative equipment during the installation process. This included the addition of two automated seaming machines and new machine and method to baste epaulets. This was accomplished while modules were being installed. While this introduction forced some additional changes on the team, they nevertheless were made successfully.

7.3 Inclusion of Many Ethnic Backgrounds

Maryland Clothing's workforce is represented by more than 12 ethnic groups and 10 languages. The history of modules has not been good with the great number of groups. The installation at Maryland Clothing proves that ethnic background and language do not have to be barriers to good performance or working together.

7.4 Shift of Training from Classroom to Practical On-floor Exercises

Much of the training done in Modular Installations is done in a classroom. This approach is very cost effective, because many people can be accommodated in a short time. This could not be done to the same level at Maryland Clothing due to the varied cultural and language backgrounds. The projects training was mainly accomplished on-floor in a practical environment. Running drills and allowing the team members to experience the results was the primary way of teaching them the best way for them to assign and manage work. These could have been taught more quickly in classroom, but they nevertheless were taught in this practical mode.

7.5 Tri-party Sponsorship, Cooperation, and Dependence

This project marks the first time that three independent entities have come together to accomplish a complete modular installation.

The bulk of the cost for the project has been borne by the DLA. This cost has not been minimal. The other two participating entities have also contributed. Maryland Clothing has also paid for the installation. Their willingness to allow their people to train on operations has exceeded the amounts reimbursed. Charles Gilbert Associates; Inc. has contributed by foregoing its profit for two man-years.

Without question, third party sponsorship is something new for an installation of this type. Obviously, the dependence upon others makes this installation almost modular in its own right. Three independent entities became dependent upon one another to accomplish something that none of the three has been able to do independently. Truly, dependence upon others had to be practiced in order to complete the project successfully. Without this full commitment by all three parties, this project could have never been completed.

INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

Exhibit I pg.1
MODULE LABOR BID WORKSHEET

Daily Work Schedule = 8.0

Daily Production, Units = 480

MODULE NAME = TEAM # 5

			O	ST	S	SB	TL	PE	TLE	BEB	MBY	SBL	TF	FB	BL	FL	SY

INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

Exhibit 1 pg.1
MODULE LABOR BID WORKSHEET

Daily Work Schedule = 8.0
Daily Production, Units = 480

MODULE NAME = ASSEMBLY 7

[illegible]

Exhibit I pg.1
MODULE LABOR BID WORKSHEET

Daily Work Schedule = 8.0
Daily Production, Units = 480.00

MODULE NAME = ASSEMBLY 8

Employee	Eff. %	Std. Hrs.	Assign'd	Balance	O P E R A T I O N	B A r s m t h e o l i e &	T A S S a r e l e w m 2 k h e v o l e	S A 1 e r / h o l e ,	M C a o c r h e n r e , 6	S t r o b e l ,	H F 4 L a e n d i t n g ,	C S L l i c o e s e v n e g s	S h i e l d s				
Total Hours @ 100% =	90.79				Opr. #	8260	8265	8270	8275	8280	8285	8290	8620				
Total Hours Available =	92.57				SAMS	2.819	2.353	1.747	0.645	0.823	2.013	0.672	0.277				
Balance =	1.78				Hours @ 100%	22.55	18.82	13.98	5.16	6.58	16.10	5.38	2.22				
					Hours Assign'd	18.56	18.86	14.40	4.37	7.13	20.31	8.95	-				
					Balance	3.99	(0.04)	(0.42)	0.79	(0.55)	(4.21)	(3.57)	2.22				
Teresina G.	107%	8.54	8.54	(0.00)		8.54											
Teresina S.	125%	10.02	10.02	(0.00)		10.02											
Domenica B.	117%	9.32	9.32	-		-	9.32										
Nery A.	119%	9.54	9.54	(0.00)			9.54										
Catherine O.	92%	7.39	7.39	0.00				7.39									
Pui Y. Law	88%	7.01	7.01	(0.00)				7.01									
Judith C.	144%	11.50	11.50	(0.00)					4.37	7.13							
V. Mace	135%	11.10	11.10	(0.00)						-	11.10						
Yi Chung	115%	9.21	9.21	(0.00)						-	9.21						
Elizabeth N.	112%	8.95	8.95	(0.00)								8.95					
X			-	-													
X			-	-													
X			-	-													
X			-	-													
X			-	-													
X			-	-													
X			-	-													
X			-	-													

INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

Exhibit 1 pg.1
MODULE LABOR BID WORKSHEET

Daily Work Schedule = 8.0
Daily Production, Units = 480

MODULE NAME = PRESSING

[illegible]

INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

Exhibit I pg.1
MODULE LABOR BID WORKSHEET

Daily Work Schedule = 8.0
Daily Production, Units = 480

MODULE NAME = FINISHING

[illegible]

Exhibit II

TEAM MEMBER TRAINING OUTLINE

I. Changing the Mindset

- A. "The Calf Path".
- B. "Discovering the Future"...a Video on Paradigms.
- C. Paradigms in the Local Plant or Company.
- D. Proof that Paradigms are Extremely Strong and Invisible.
- E. Paradigm Recognition.
- F. Can Anything get Better Without Change?

II. Dr. Deming's 14 Points

- A. Background on Dr. Deming.
- B. The 14 Points.

III. The Transformation ... From Lines to Modules

- A. Push Versus Pull Methods of Manufacturing.
- B. The Hewlett Packard Video ... Stockless Production.
- C. What is Missing in the Hewlett Packard Video That is in Modular Manufacturing.

IV. General Statements about Modules

- A. Group Dynamics.
- B. General Objectives of Modular.
- C. General Benefits of Modular.
- D. Orientation of the Organization.
- E. Stages of Group Development.

V. Motivation...from within or without?

- A. Push versus Pull Motivation.
- B. Taylor's Approach.
- C. Macgregor's Approach.
- D. Maslow's Hierarchy of Needs.
- E. Hirschberg's Hygiene Theory.
- F. Why People Work.
- G. Leadership.
- H. Changing Role of Supervisor.

VI. Problem Solving

- A. Desert Survival Exercise.
- B. Nominal Group Technique of Decision Making.
- C. Bob's Way to Solve a Problem.

Exhibit II

- D. Choosing a Group Name Using Bob's Way.

VII. Team Leader and Team Meetings

- A. Duties and Responsibilities of the Team Leader.
- B. The Team Meeting.
- C. Whose Responsibility is it?
- D. Team Meetings Discussion Topics.

VIII. Getting along in Modules

- A. Communications, the Basic Elements.
- B. Road Blocks to Communication.
- C. Active Listening Skills.
- D. "The Art of Resolving Conflicts in the Workplace". (Video)
- E. "Blame it on the Work".
- F. "The Golden Rule in Modular Manufacturing".
- G. Strive to Understand, Then to be Understood.
- H. Class Exercise.

IX. Quality...Built into the Process

- A. Continuous Process Improvement.
- B. The Group Approach to Quality Improvement.
- C. Count the M's Exercise.
- D. Quality Program for the Local Plant.
- E. What If?

X. Value-Added Concepts

- A. Value-Added Labor Versus Non-Value Added.
- B. Competition and the Value Added Concept.
- C. Modular Seeks to Minimize the Non-Value Added Parts of Labor.

XI. Profit is not a Dirty Word

- A. Profits are Essential to Organization Survival.
- B. The Pie Chart of a Company's Dollar.
 - C. Absence, Turnover, Machine Trouble, etc., Have Always Cost us Money and the Company Profit. They were Just Hidden and we Could not Deal with it.
 - D. Modular Manufacturing Allows the Effects of These Things to be Immediately Visible, the Group can Deal with it.

XII. Methods

- A. The Uses of Methods.
- B. A Methods Checklist.
- C. Are Methods Different for Operations in Teams vs. Individual Incentives?

Exhibit II

XIII. Module Design for the Plant

- A. Summary of Decisions Made by the Steering Committee.
- B. Other Write-ups on Local Plant.

XIV. Module Pay Plan for Plant

XV. Team Goal Setting...The Bid Process

- A. Setting Output Goals.
- B. Setting Operation Responsibility.
- C. Committing to the Group.

EXHIBIT III, 1 of 2

TABLE 1: ANALYSIS OF POTENTIAL LOST LABOR, MARYLAND CLOTHING, MODULAR PROJECT

LOADED WAGE RATE		TRAINING HOURS ANTICIPATED, BY TASK		
MD. CLOTHING, AVG. WAGE	\$ 8.130	HOURS OF CLASSROOM TRAINING		24.00
OVERTIME PREMIUM	\$ 4.065	HOURS OF CROSS TRAINING	40.00	
TOTAL HRLY WAGE	\$ 12.195	EFFICIENCY LEVEL, CROSSTRAIN	33.33%	
VARIABLE FRINGE BENEFITS	\$ 4.376	EFFECTIVE HOURS LOST		26.67
TOTAL HRLY WAGE	\$ 16.571	PER EMPLOYEE, HOURS LOST		50.67

POTENTIAL LOST LABOR

PHASE I, LOST LABOR	PEOPLE*	WAGE	HOURS	EXTENSION
BASE WAGE	42	\$ 8.130	50.67	\$ 17,301
VARIABLE FRINGE BENEFITS	42	\$ 4.065	50.67	\$ 8,650
OVERTIME PREMIUM	42	\$ 4.376	50.67	\$ 9,312
TOTAL, NOT TO EXCEED...	42	\$ 16.571	50.67	\$ 35,263

* There are now 41 people on roll, it is anticipated that at least 1 additional person will be trained.

CALCULATION OF WAGE AMOUNTS AND ANNUAL BASE WAGE

CATEGORY	AMOUNT	DOCUMENTATION
Average Hourly Wage:	\$8.13	YTD Payroll Data, thru 3/01/97
Average Annual Wage:	\$ 14,979	47 wks., 40 hrs/week., 2% absence

BUILD-UP OF VARIABLE FRINGE BENEFIT RATE

FRINGE BENEFIT ITEM			VARIABLE	FIXED**	SOURCE
Amalgamated, Retirement & Social Insurance			19.93%	0.00%	Contract
Amalgamated Regional Health & Welfare			2.00%	0.00%	Contract
Amalgamated, Retirement & Social Insurance \$16.67/Wk. 49 wks. = \$ 816.83 annually.			0.00%	5.45%	Contract
FICA			7.65%	0.00%	Federal
Futa			0.80%	0.00%	Federal
Muta			3.20%	0.00%	State
Holidays, 11 Per Year	\$ 715.44	4.78%	0	4.78%	Contract
Vacations, 15 Days	\$ 975.60	6.51%	0	6.51%	Contract
Workmans Comp			2.30%	0.00%	State Law
Total			35.88%	16.74%	

**Reimbursement is being sought only for variable fringe benefits

INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

ANALYSIS OF POTENTIAL LOST LABOR, MARYLAND CLOTHING, MODULAR PROJECT, PHASE II

LOADED WAGE RATE		TRAINING HOURS ANTICIPATED, BY TASK		
MD. CLOTHING, AVG. WAGE*	\$ 8.330	HOURS OF CLASSROOM TRAINING		24.00
OVERTIME PREMIUM	\$ 4.165	HOURS OF CROSS TRAINING	40.00	
TOTAL HRLY WAGE	\$ 12.495	EFFICIENCY LEVEL, CROSSTRAIN	33.33%	
VARIABLE FRINGE BENEFITS	\$ 4.484	EFFECTIVE HOURS LOST		26.67
TOTAL HRLY WAGE	\$ 16.979	PER EMPLOYEE, HOURS LOST		50.67

* Average wage includes a contractual \$0.20 per hour per employee, effective September 1, 1997.

POTENTIAL LOST LABOR

PHASE I, LOST LABOR	PEOPLE**	WAGE	HOURS	EXTENSION
BASE WAGE	70	\$ 8.330	50.67	\$ 29,544
VARIABLE FRINGE BENEFITS	70	\$ 4.165	50.67	\$ 14,772
OVERTIME PREMIUM	70	\$ 4.484	50.67	\$ 15,902
TOTAL, NOT TO EXCEED...	70	\$ 16.979	50.67	\$ 60,218
LESS: MARYLAND CLOTHING, COST SHARING @ 50%				\$ (30,109)
AMOUNT REQUESTED				\$ 30,109

** There are now 65 people on role in the sewing room who will be placed into modules. In addition, it is anticipated that a maximum of 5 people will be added as replacements for turnover.

CALCULATION OF WAGE AMOUNTS AND ANNUAL BASE WAGE

CATEGORY	AMOUNT	DOCUMENTATION
Average Hourly Wage:	\$8.33	YTD Payroll Data, thru 3/01/97
Average Annual Wage:	\$ 15,347	47 wks., 40 hrs/week., 2% absence

BUILD-UP OF VARIABLE FRINGE BENEFIT RATE

FRINGE BENEFIT ITEM		VARIABLE	FIXED**	SOURCE
Amalgamated, Retirement & Social Insurance		19.93%	0.00%	Contract
Amalgamated Regional Health & Welfare		2.00%	0.00%	Contract
Amalgamated, Retirement & Social Insurance \$16.67/Wk. 49 wks. = \$ 816.83 annually.		0.00%	5.32%	Contract
FICA		7.65%	0.00%	Federal
Futa		0.80%	0.00%	Federal
Muta		3.20%	0.00%	State
Holidays, 11 Per Year \$ 733.04	4.78%	0	4.78%	Contract
Vacations, 15 Day \$ 999.60	6.51%	0	6.51%	Contract
Workmans Comp		2.30%	0.00%	State Law
Total		35.88%	16.61%	

**Reimbursement is being sought only for variable fringe benefits

Exhibit IV, pg. 1

PROPOSED SPLIT INCENTIVE, UTILITY EMPLOYEES

METHOD I, A FIXED RATE PER HOUR PLUS A PERCENT OF TICKETS EARNED

Subtract \$1.50 per hour from the "Old Average". Add to this "New Average"						
33.3% of the Ticket Money Earned.						
A.	OLD HRLY. AVG.	NEW HRLY. AVG.	PERCENT OF TKTS.	HRLY. AMT. OF TKTS. EARNED	HRLY. AMT. OF TKTS. PAID	NEW HOURLY PAY
	\$ 9.00	\$ 7.50	33%	\$ 3.25	\$ 1.08	\$ 8.57
	\$ 9.00	\$ 7.50	33%	\$ 4.00	\$ 1.33	\$ 8.82
	\$ 9.00	\$ 7.50	33%	\$ 6.00	\$ 2.00	\$ 9.48
Subtract \$2.00 per hour from the "Old Average". Add to this "New Average"						
50.0% of the Ticket Money Earned.						
B.	OLD HRLY. AVG.	NEW HRLY. AVG.	PERCENT OF TKTS.	HRLY. AMT. OF TKTS. EARNED	HRLY. AMT. OF TKTS. PAID	NEW HOURLY PAY
	\$ 9.00	\$ 7.00	50%	\$ 3.25	\$ 1.63	\$ 8.63
	\$ 9.00	\$ 7.00	50%	\$ 4.00	\$ 2.00	\$ 9.00
	\$ 9.00	\$ 7.00	50%	\$ 6.00	\$ 3.00	\$ 10.00
Subtract \$2.50 per hour from the "Old Average". Add to this "New Average"						
65.0% of the Ticket Money Earned.						
C.	OLD HRLY. AVG.	NEW HRLY. AVG.	PERCENT OF TKTS.	HRLY. AMT. OF TKTS. EARNED	HRLY. AMT. OF TKTS. PAID	NEW HOURLY PAY
	\$ 9.00	\$ 6.50	65%	\$ 3.25	\$ 2.11	\$ 8.61
	\$ 9.00	\$ 6.50	65%	\$ 4.00	\$ 2.60	\$ 9.10
	\$ 9.00	\$ 6.50	65%	\$ 6.00	\$ 3.90	\$ 10.40
Subtract \$3.00 per hour from the "Old Average". Add to this "New Average"						
80.0% of the Ticket Money Earned.						
D.	OLD HRLY. AVG.	NEW HRLY. AVG.	PERCENT OF TKTS.	HRLY. AMT. OF TKTS. EARNED	HRLY. AMT. OF TKTS. PAID	NEW HOURLY PAY
	\$ 9.00	\$ 6.00	80%	\$ 3.25	\$ 2.60	\$ 8.60
	\$ 9.00	\$ 6.00	80%	\$ 4.00	\$ 3.20	\$ 9.20
	\$ 9.00	\$ 6.00	80%	\$ 6.00	\$ 4.80	\$ 10.80
Subtract \$3.50 per hour from the "Old Average". Add to this "New Average"						
100.0% of the Ticket Money Earned.						
	OLD HRLY. AVG.	NEW HRLY. AVG.	PERCENT OF TKTS.	HRLY. AMT. OF TKTS. EARNED	HRLY. AMT. OF TKTS. PAID	NEW HOURLY PAY
	\$ 9.00	\$ 5.50	100%	\$ 3.25	\$ 1.08	\$ 8.75
	\$ 9.00	\$ 5.50	100%	\$ 4.00	\$ 1.33	\$ 9.50
	\$ 9.00	\$ 5.50	100%	\$ 6.00	\$ 2.00	\$ 11.50

TO SET UP THIS SYSTEM, KNOWLEDGE OF THE PERSON'S TRUE TICKET EARNINGS IS NECESSARY. THE IDEA IS TO GIVE THE SAME EARNINGS POTENTIAL FOR THE SAME LEVEL OF HISTORIC OUTPUT.

* FOR ANY OLD AVERAGE DIFFERENT FROM \$9.00, ADD OR SUBTRACT THE DIFFERENCE BETWEEN THE DIFFERENT AVERAGE AND \$9.00 TO THE NEW FIXED HOURLY AVERAGE.

EXAMPLE, IF OLD AVG IS \$8.00, SUBTRACT \$1.00 FROM THE NEW FIXED RATE
 (\$8.00-\$9.00)+\$6.50 = \$5.50)

OLD AVG	NEW FIXED	TKT. %	IF TKTS. ARE	TKTS. PAID ARE	THEN PAY IS
\$ 8.00	\$ 5.50	65%	\$ 4.00	\$ 2.60	\$ 8.10

THE EXAMPLES ABOVE ARE USED ONLY FOR REFERENCE. THE BASIC PRINCIPLE IS TO PRESERVE SOME PART OF THE OLD AVERAGE AS A NEW GUARANTEE. THE ABILITY TO EARN MORE BASED UPON ACTUAL EARNINGS IS HOPED TO SPUR THE UTILITY EMPLOYEE INTO INCREASING OUTPUT.

Exhibit IV, pg. 2

PROPOSED SPLIT INCENTIVE, UTILITY EMPLOYEES

METHOD II, A PERCENTAGE OF HOURLY AVERAGE, PLUS PERCENTAGE OF TICKETS EARNED

Pay 75% of Previous Average Plus 50% of Tickets Earned.

A.	OLD HRLY. AVERAGE	PERCENT OF AVG.	HRLY. AMT. FROM AVG.	PERCENT OF TKTS.	HRLY. AMT. OF TKTS. EARNED	HRLY. AMT. OF TKTS. PAID	NEW HOURLY PAY
	\$ 9.00	75%	\$ 6.75	50%	\$ 3.25	\$ 1.63	\$ 8.38
	\$ 9.00	75%	\$ 6.75	50%	\$ 4.00	\$ 2.00	\$ 8.75

Pay 67% of Previous Average Plus 67% of Tickets Earned.

B.	OLD HRLY. AVERAGE	PERCENT OF AVG.	HRLY. AMT. FROM AVG.	PERCENT OF TKTS.	HRLY. AMT. OF TKTS. EARNED	HRLY. AMT. OF TKTS. PAID	NEW HOURLY PAY
	\$ 9.00	67%	\$ 6.00	67%	\$ 4.00	\$ 2.67	\$ 8.67
	\$ 9.00	67%	\$ 6.00	67%	\$ 6.00	\$ 4.00	\$ 10.01

Pay 50% of Previous Average Plus 100% of Tickets Earned.

C.	OLD HRLY. AVERAGE	PERCENT OF AVG.	HRLY. AMT. FROM AVG.	PERCENT OF TKTS.	HRLY. AMT. OF TKTS. EARNED	HRLY. AMT. OF TKTS. PAID	NEW HOURLY PAY
	\$ 9.00	50%	\$ 4.50	100%	\$ 4.00	\$ 4.00	\$ 8.50
	\$ 9.00	50%	\$ 4.50	100%	\$ 6.00	\$ 6.00	\$ 10.50

TO SET UP THIS SYSTEM, KNOWLEDGE OF THE PERSON'S TRUE TICKET EARNINGS IS NECESSARY. THE IDEA IS TO GIVE THE SAME EARNINGS POTENTIAL FOR THE SAME LEVEL OF HISTORIC OUTPUT.

TO EXPERIMENT, JUST SUBSTITUTE THE NUMBERS YOU WOULD LIKE TO SEE WITH THE ONES LISTED ABOVE.

THE EXAMPLES ABOVE ARE USED ONLY FOR REFERENCE. THE BASIC PRINCIPLE IS TO PRESERVE SOME PART OF THE OLD AVERAGE AS A NEW GUARANTEE USING A PERCENTAGE. THE ABILITY TO EARN MORE BASED UPON ACTUAL EARNINGS IS HOPED TO SPUR THE UTILITY EMPLOYEE INTO INCREASING OUTPUT.

Exhibit IV, pg. 3

PROPOSED SPLIT INCENTIVE, UTILITY EMPLOYEES

METHOD III, A THRESHOLD APPROACH BASED UPON TICKET EARNINGS

Simply find where the hourly earnings for the period fall, then move to the right column to find the amount to pay to the Utility.

IF HOURLY AMOUNT OF TICKETS EARNED ARE		THEN HOURLY PAY IS
AT LEAST	BUT LESS THAN	
\$0.01	\$ 3.00	\$6.50
\$ 3.90	\$ 4.50	\$ 7.40
\$ 4.00	\$ 4.50	\$ 7.80
\$ 4.50	\$ 5.00	\$ 8.20
\$ 5.00	\$ 5.50	\$ 8.60

IF HOURLY AMOUNT OF TICKETS EARNED ARE		THEN HOURLY PAY IS
AT LEAST	BUT LESS THAN	
\$ 5.50	\$ 6.00	\$ 9.00
\$ 6.90	\$ 7.50	\$ 9.60
\$ 7.00	\$ 7.50	\$ 10.20
\$ 7.50	\$ 8.00	\$ 10.60
\$ 8.00	\$ 9.00	\$ 11.20

TO SET UP THIS SYSTEM, KNOWLEDGE OF THE PERSON'S TRUE TICKET EARNINGS IS NECESSARY. THE IDEA IS TO GIVE THE SAME EARNINGS POTENTIAL FOR THE SAME LEVEL OF HISTORIC OUTPUT.

REDILY AVAILABLE. IT IS SIMPLE WAY TO KNOW HOW MUCH WILL BE PAID FOR THE DIFFERENT EARNINGS LEVELS.

TO EXPERIMENT, JUST SUBSTITUTE THE NUMBERS YOU WOULD LIKE TO SEE WITH THE ONES LISTED ABOVE.

THE EXAMPLES ABOVE ARE USED ONLY FOR REFERENCE. THE BASIC PRINCIPLE IS TO PAY AT HIGHER LEVELS THAN ARE ACTUALLY EARNED. THE RESPONSIBILITY FOR PERFORMANCE IS PLACED UPON THE UTILITY TO EARN AS MUCH AS THEY CAN.

ALL 4 ONE
#2

Daily Performance
Week End mm-dd-yy

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Total for Week
Units	480	480	0	0	0	0	960
Team PW\$'s	\$ 745.44	\$ 745.44	\$ -	\$ -	\$ -	\$ -	\$1,490.88
Time Work \$'s	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$0.00
Trf \$'s	\$ -	\$ (62.10)	\$ -	\$ -	\$ -	\$ -	(\$62.10)
Team Hrs	96.00	88.00	0.00	0.00	0.00	0.00	184.00
\$'s / Hr	\$7.77	\$7.77	\$0.00	\$0.00	\$0.00	\$0.00	\$7.77
Plus YOUR Incumbent Adj.							

ALL 4 ONE
2

Exhibit V pg. 2

SUMMARY mm-dd-yy

CLOCK NUMBER	NAME	HOURS WORKED	NON-Team HOURS	Team Hrs WORKED	INCUMBENT ADJUST	EARNINGS SPLIT	TOTAL PAY	EARNINGS / HOUR	Expected Earnings	Expected difference	1998 Average	PW. EARNED
1650	BIENVENIDA ABREU	16.00	-	16.00	\$ 10.24	124.24	\$ 134.48	\$ 8.41	\$ 8.21	\$ 0.20	\$ 8.09	
2100	KITTY BAPISTELLER	16.00	-	16.00	\$ 52.80	124.24	\$ 177.04	\$ 11.07	\$ 10.87	\$ 0.20	\$ 11.12	
2830	MARY CARTER	16.00	-	16.00	\$ 24.64	124.24	\$ 148.88	\$ 9.31	\$ 9.11	\$ 0.20	\$ 9.14	
4850	UNSUKE FREDERICK	16.00	-	16.00	\$ 54.88	124.24	\$ 179.12	\$ 11.20	\$ 11.00	\$ 0.20	\$ 11.06	
5950	LINDA HARRIS	16.00	-	16.00	\$ 13.44	124.24	\$ 137.68	\$ 8.61	\$ 8.41	\$ 0.20	\$ 8.41	
6215	LEX JOHNSONS	8.00	-	8.00	\$ 9.12	62.12	\$ 71.24	\$ 8.91	\$ 8.71	\$ 0.20	\$ 8.99	
6300	GURDEV KAUR	16.00	-	16.00	\$ 10.08	124.24	\$ 134.32	\$ 8.40	\$ 8.20	\$ 0.20	\$ 7.60	
8960	NINFA PALOMA	16.00	-	16.00	\$ (8.80)	124.24	\$ 115.44	\$ 7.22	\$ 7.02	\$ 0.20	\$ 6.76	
10100	THELMA ROGERS	16.00	-	16.00	\$ (13.92)	124.24	\$ 110.32	\$ 6.90	\$ 6.70	\$ 0.20	\$ 7.00	
10350	K SINGH	16.00	-	16.00	\$ 9.76	124.24	\$ 134.00	\$ 8.38	\$ 8.18	\$ 0.20	\$ 8.40	
11375	D TUMMINELLO	16.00	-	16.00	\$ 48.64	124.24	\$ 172.88	\$ 10.81	\$ 10.61	\$ 0.20	\$ 10.79	
5200	MARIA GRACIA	16.00	-	16.00	\$ (18.72)	124.24	\$ 105.52	\$ 6.60	\$ 6.40	\$ 0.20	\$ 6.74	
#13		-	-	-	\$ -	-	\$ -	\$ -	\$ -	\$ -	\$ -	
#14		-	-	-	\$ -	-	\$ -	\$ -	\$ -	\$ -	\$ -	
#15		-	-	-	\$ -	-	\$ -	\$ -	\$ -	\$ -	\$ -	
	Totals	184.00		184.00	\$ 192.16	\$ 1,428.76	\$ 1,620.92					
960	UNITS						\$ 1,700.94	TOTAL COST OF THIS TEAM				
184.00	HOURS ON-STD						\$ 1,490.88	PIECE WORK \$'s				
5.22	UNITS PER HOUR						\$ 192.16	INCUMBENT \$'s				
115.9%	TEAM ON-STD %						\$ -	OFF STD \$'s				
							\$ 17.90	TRF EXCESS \$'s				
\$ 1.772	COST PER COAT COMPARED TO			\$ 1.769			\$ -	MAKE UP & OVERTIME PREM				
\$ 1.772	TOTAL COST W/ O.T., M.U. & MISC per COAT						\$ -	MISC \$'s				
CLOCK #	NAME	TW	OT	REG \$'s	TW \$'s	MKUP \$'s	OT \$'s	MISC \$'s	GROSS \$'s			
1650	BIENVENIDA ABREU	-	-	\$ 134.48	\$ -	\$ -	\$ -		\$ 134.48			
2100	KITTY BAPISTELLER	-	-	\$ 177.04	\$ -	\$ -	\$ -		\$ 177.04			
2830	MARY CARTER	-	-	\$ 148.88	\$ -	\$ -	\$ -		\$ 148.88			
4850	UNSUKE FREDERICK	-	-	\$ 179.12	\$ -	\$ -	\$ -		\$ 179.12			
5950	LINDA HARRIS	-	-	\$ 137.68	\$ -	\$ -	\$ -		\$ 137.68			
6215	LEX JOHNSONS	-	-	\$ 71.24	\$ -	\$ -	\$ -		\$ 71.24			
6300	GURDEV KAUR	-	-	\$ 134.32	\$ -	\$ -	\$ -		\$ 134.32			
8960	NINFA PALOMA	-	-	\$ 115.44	\$ -	\$ -	\$ -		\$ 115.44			
10100	THELMA ROGERS	-	-	\$ 110.32	\$ -	\$ -	\$ -		\$ 110.32			
10350	K SINGH	-	-	\$ 134.00	\$ -	\$ -	\$ -		\$ 134.00			
11375	D TUMMINELLO	-	-	\$ 172.88	\$ -	\$ -	\$ -		\$ 172.88			
5200	MARIA GRACIA	-	-	\$ 105.52	\$ -	\$ -	\$ -		\$ 105.52			
#13		-	-	\$ -	\$ -	\$ -	\$ -		\$ -			
#14		-	-	\$ -	\$ -	\$ -	\$ -		\$ -			
#15		-	-	\$ -	\$ -	\$ -	\$ -		\$ -			
	TOTALS			\$ 1,620.92	\$ -	\$ -	\$ -	\$ -	\$ 1,620.92			

MONDAY mm-01-yy

CLOCK NUMBER	NAME	HOURS WORKED	Non-Team HOURS	Team Hrs WORKED	HOURS OFF-STD.	HOURS ON-STD.	OVERTIME HOURS
1650	BIENVENIDA ABREU	8.00		8.00		8.00	-
2100	KITTY BAPISTELLER	8.00		8.00		8.00	-
2830	MARY CARTER	8.00		8.00		8.00	-
4850	UNSUKE FREDERICK	8.00		8.00		8.00	-
5950	LINDA HARRIS	8.00		8.00		8.00	-
6215	ALEX JOHNSONS	8.00		8.00		8.00	-
6300	GURDEV KAUR	8.00		8.00		8.00	-
8960	NINFA PALOMA	8.00		8.00		8.00	-
10100	THELMA ROGERS	8.00		8.00		8.00	-
10350	K SINGH	8.00		8.00		8.00	-
11375	D TUMMINELLO	8.00		8.00		8.00	-
5200	MARIA GRACIA	8.00		8.00		8.00	-
#13				-		-	-
#14				-		-	-
#15				-		-	-
Totals		96.00		96.00	-	96.00	
			STYLE	PIECES	SAM's / PIECE	RATE / PIECE	P. RATE DOLLARS
				PRODUCED	PIECE	\$1.553	\$ 745.44
				480	13.91	\$ 1.553	\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
				480	TOTAL P. RATE \$	\$ 745.44	
					OFF STD:	\$ -	
		TRANSFER IN OR OUT					
	NAME	(+/-) HRS	OPR #	MINUS PCS	SAM/PC	RATE/PC	
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
							\$ -
					TOTAL PAID	\$ 745.44	
					PW \$'s per HR	\$ 7.77	
					(+/-) Expected	\$0.20	

ALL 4 ONE
2

TUESDAY mm-02-yy

CGA PPFG T1-P1 Final Report

1. ☐ 2. ☐ 3. ☐ 4. ☐ 5. ☐ 6. ☐ 7. ☐ 8. ☐ 9. ☐ 10. ☐ 11. ☐ 12. ☐ 13. ☐ 14. ☐ 15. ☐ 16. ☐ 17. ☐ 18. ☐ 19. ☐ 20. ☐ 21. ☐ 22. ☐ 23. ☐ 24. ☐ 25. ☐ 26. ☐ 27. ☐ 28. ☐ 29. ☐ 30. ☐ 31. ☐ 32. ☐ 33. ☐ 34. ☐ 35. ☐ 36. ☐ 37. ☐ 38. ☐ 39. ☐ 40. ☐ 41. ☐ 42. ☐ 43. ☐ 44. ☐ 45. ☐ 46. ☐ 47. ☐ 48. ☐ 49. ☐ 50. ☐ 51. ☐ 52. ☐ 53. ☐ 54. ☐ 55. ☐ 56. ☐ 57. ☐ 58. ☐ 59. ☐ 60. ☐ 61. ☐ 62. ☐ 63. ☐ 64. ☐ 65. ☐ 66. ☐ 67. ☐ 68. ☐ 69. ☐ 70. ☐ 71. ☐ 72. ☐ 73. ☐ 74. ☐ 75. ☐ 76. ☐ 77. ☐ 78. ☐ 79. ☐ 80. ☐ 81. ☐ 82. ☐ 83. ☐ 84. ☐ 85. ☐ 86. ☐ 87. ☐ 88. ☐ 89. ☐ 90. ☐ 91. ☐ 92. ☐ 93. ☐ 94. ☐ 95. ☐ 96. ☐ 97. ☐ 98. ☐ 99. ☐ 100. ☐

[illegible]

ALL 4 ONE
2

[illegible]

TEAM NAME #

TEAM NAME #

INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

ALL "4" ONE

2

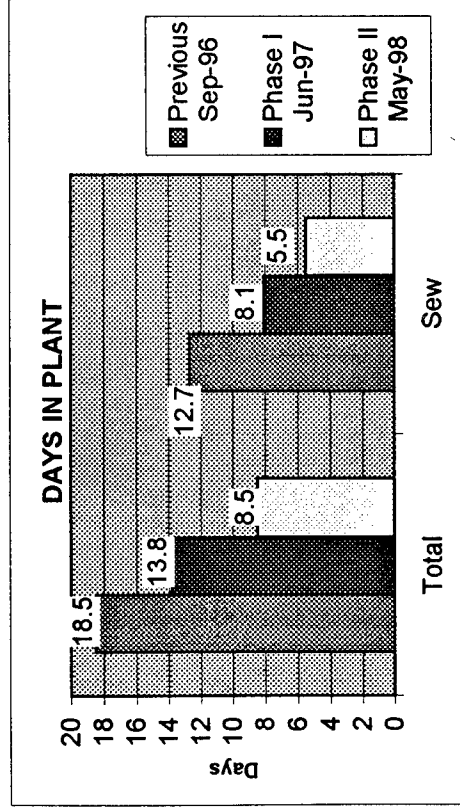
Exhibit V pg.5

INCUMBENT ADJ eff. 4-20 5-23

CLK #	NAME	1998 Average	CONVR RATE	Expected Earnings	BONUS per HOUR	Expected (-) BONUS	AVG %	AVG. \$ @	Incumbent Adjustment	MINIMUM WAGE
1650	BIENVENIDA ABREU	\$ 8.09	\$7.440	\$ 8.21	\$ 0.20	\$ 8.01	107.7%		\$ 0.64	\$5.15
2100	KITTY BAPISTELLER	\$ 11.12	\$7.050	\$ 10.87	\$ 0.90	\$ 9.97	141.4%		\$ 3.30	\$5.15
2830	MARY CARTER	\$ 9.14	\$6.672	\$ 9.11	\$ 0.90	\$ 8.21	123.1%		\$ 1.54	\$5.15
4850	UNSUKE FREDERICK	\$ 11.06	\$6.672	\$ 11.00	\$ 0.40	\$ 10.60	158.9%		\$ 3.43	\$5.15
5950	LINDA HARRIS	\$ 8.41	\$7.440	\$ 8.41	\$ 0.70	\$ 7.71	103.6%		\$ 0.84	\$5.15
6215	LEX JOHNSONS	\$ 8.99	\$7.998	\$ 8.71	\$ 0.90	\$ 7.81	97.6%		\$ 1.14	\$5.15
6300	GURDEV KAUR	\$ 7.60	\$6.252	\$ 8.20	\$ 0.20	\$ 8.00	128.0%		\$ 0.63	\$5.15
8960	NINFA PALOMA	\$ 6.76	\$6.252	\$ 7.02	\$ 0.20	\$ 6.82	109.1%		\$ (0.55)	\$5.15
10100	THELMA ROGERS	\$ 7.00	\$7.440	\$ 6.70	\$ 0.90	\$ 5.80	78.0%		\$ (0.87)	\$5.15
10350	K SINGH	\$ 8.40	\$6.252	\$ 8.18	\$ 0.20	\$ 7.98	127.6%		\$ 0.61	\$5.15
11375	D TUMMINELLO	\$ 10.79	\$10.602	\$ 10.61	\$ 0.40	\$ 10.21	96.3%		\$ 3.04	\$5.15
5200	MARIA GRACIA	\$ 6.74	\$6.500	\$ 6.40	\$ 0.40	\$ 6.00	92.3%		\$ (1.17)	\$5.15
#13						\$ -	FALSE		\$ -	\$5.15
#14						\$ -	FALSE		\$ -	\$5.15
#15						\$ -	FALSE		\$ -	\$5.15
12	TOTALS			\$ 8.62	\$ 6.30	LOCKED	113.00%	\$ 7.571	\$1.0483	
OPR #	OPERATION		SAM's	SAM/BH	SAM's	\$'s/coat	467.9	TEAM OLD AVG		
8000	BOOK SIDE BODY		0.524	0.000	0.524	\$ 0.0650				
8005	GORE & SHLDR TAPE		2.525	0.000	2.525	\$ 0.3051				
8010	FRT AH TAPE		1.025	0.000	1.025	\$ 0.1068				
8015	PRESS GORES		1.129	0.000	1.129	\$ 0.1176				
8020	MARK FRONT		1.034	0.000	1.034	\$ 0.1378				
8030	CUT IN REECE FRT PKT		0.881	0.000	0.881	\$ 0.1557				
8025	SET PATCH		1.746	0.000	1.746	\$ 0.2012				
8035	FIN. REECE FRT PKT		2.849	0.000	2.849	\$ 0.3158				
8375	SEW PLT PATCH		0.540		0.540	\$ 0.0563				
8380	TCK PLT PATCH		0.286		0.286	\$ 0.0298				
8385	FUSE PATCH		0.260		0.260	\$ 0.0282				
8390	DIE CUT PATCH		0.436		0.436	\$ 0.0472				
8395	SERGE PATCH		0.397		0.397	\$ 0.0430				
8400	MAKE CASH PKT		0.448		0.448	\$ 0.0467				
0			0.000						STD \$'s	\$ 1.5533
									Total Cost per Coat:	\$ 1.7685
	TOTAL		14.080	0.000	14.080	\$ 1.6562	\$ 0.1077	0.0051	OLD	\$1.7690
	PLUS TEAM BHT		-0.170	=	TEAM SAM's	13.910	BASE RATE:	\$	6.70	

Exhibit VI

PHASE I & II, KEY PERFORMANCE BENCHMARKS



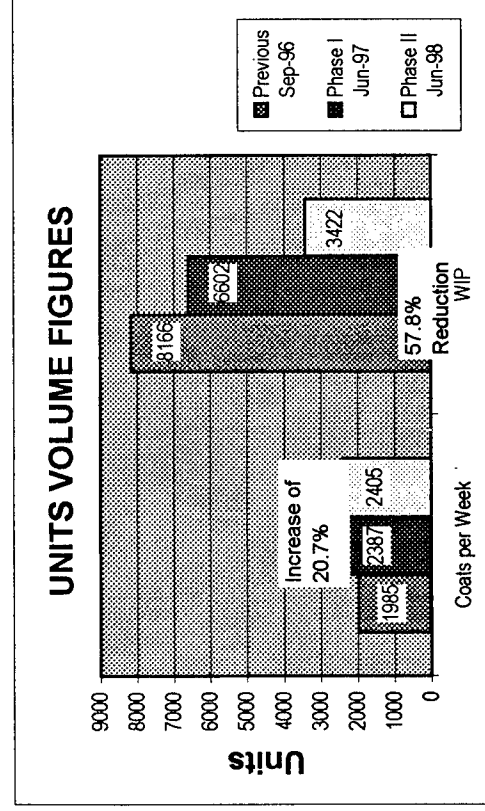
DAYS IN PLANT is the number of working days a bundle of garments is in the plant.

TOTAL includes Cutting and Sewing and Finishing. It includes all time once an order is reported cut.

SEW includes Sewing and Finishing. It includes time once a bundle is begun, until it is completed.

KEY OBSERVATIONS

A reduction of 36.2% after Phase I
56.7% after Phase II



PIECES PRODUCED PER WEEK is an attempt to state production on a full week basis. It is the daily average multiplied by five.

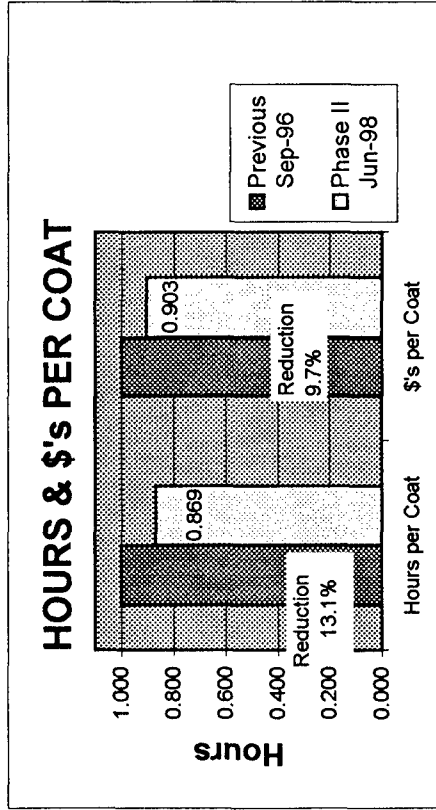
WIP is work in process. It is the number of pieces cut but not finished.

KEY OBSERVATIONS

Units produced is up significantly, 20.7%, The increase was across the plant, but the non-team areas during Phase I had greater difficulty in achieving the increase. It became easier after Team setups in Phase II.
WIP reduced by 57.8% during both phases.

Exhibit VI

PHASE I & II, KEY PERFORMANCE BENCHMARKS

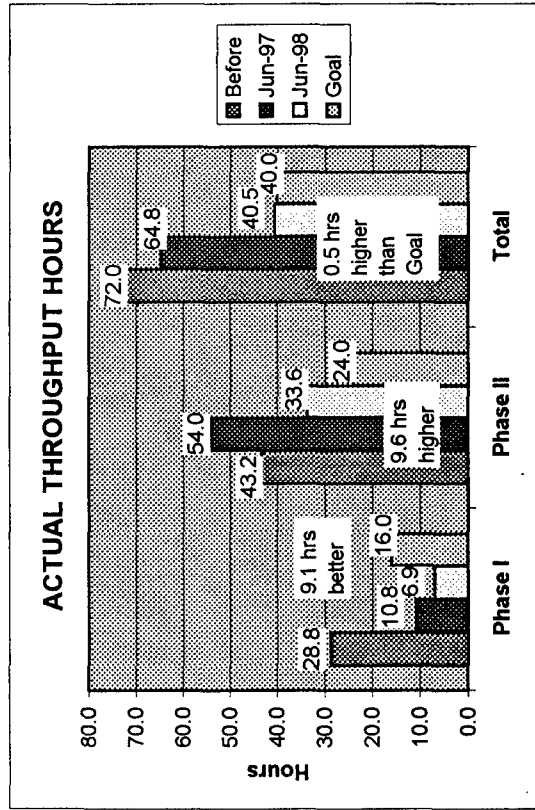


HOURS PER COATS, is obtained by dividing actual hours worked by pieces produced and comparing to an std. Index of one.

DOLLARS PER COAT, is obtained by dividing actual payroll by pieces produced and comparing it to an index of one.

KEY OBSERVATION

There is a real decrease in hours per unit. This means there is a real increase in productivity of the same amount of 13.1 %.
A cost reduction of 9.7% per coat.



THROUGHPUT, ACTUAL HOURS is a way of stating the time required to get a bundle through the operations. BEFORE is an average of 8.0 hours per module. This was from the base data collected before Phase I began. GOAL is an average of 4.4 hours per module.

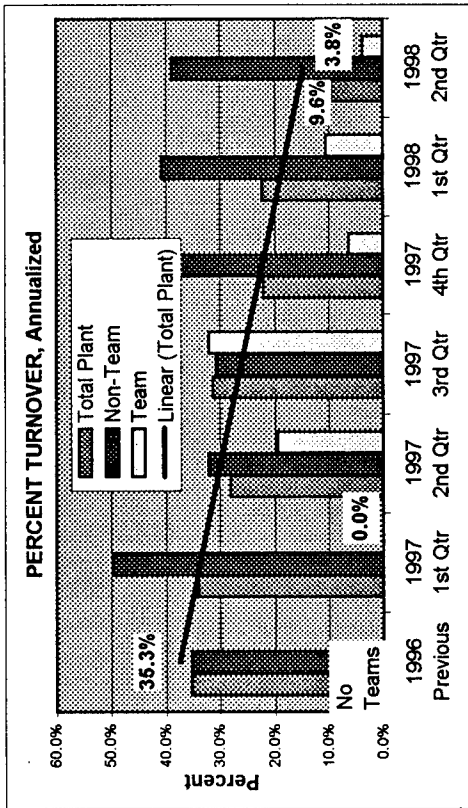
ACTUAL is the number of bundles before and present in the teams divided by the current output of the teams.

KEY OBSERVATION

The increase for Phase II in throughput Jun-97 was before teams in that area which indicates some difficulties the non-teams were having.
Jun-98 Phase I teams 9.1 hrs better than Goal, Phase II teams 9.6 higher than Goal. Total 0.5 hrs off Goal

Exhibit VI

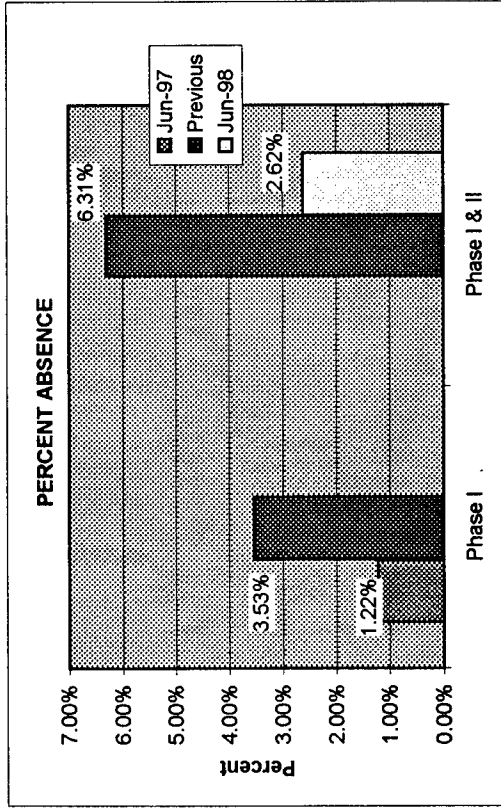
PHASE I & II, KEY PERFORMANCE BENCHMARKS



PERCENT ANNUALIZED TURNOVER is the number of people terminated divided by the number of people on roll.

KEY OBSERVATION

During 1 Qtr'97 there was zero turnover of Team members. As more members were added to Teams the turnover for the Plant dropped steadily (see trend line) Non-Team Turnover remained constant for the project. All Teams for 2nd Qtr '98 had 3.8% turnover with 105 members.



PERCENT ABSENCE is the difference between hours available (plant schedule multiplied by people on roll) and actual hours worked, divided by hours available.

KEY OBSERVATION

Attendance at Maryland Clothing is excellent overall, because management aggressively manages this. Even with this, absence is reduced significantly in teams. This is seen as a sign of improved morale of people in the teams.

INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

Exhibit VII pg. 1

SUMMARY OF PHASE II MODULE SCOPE

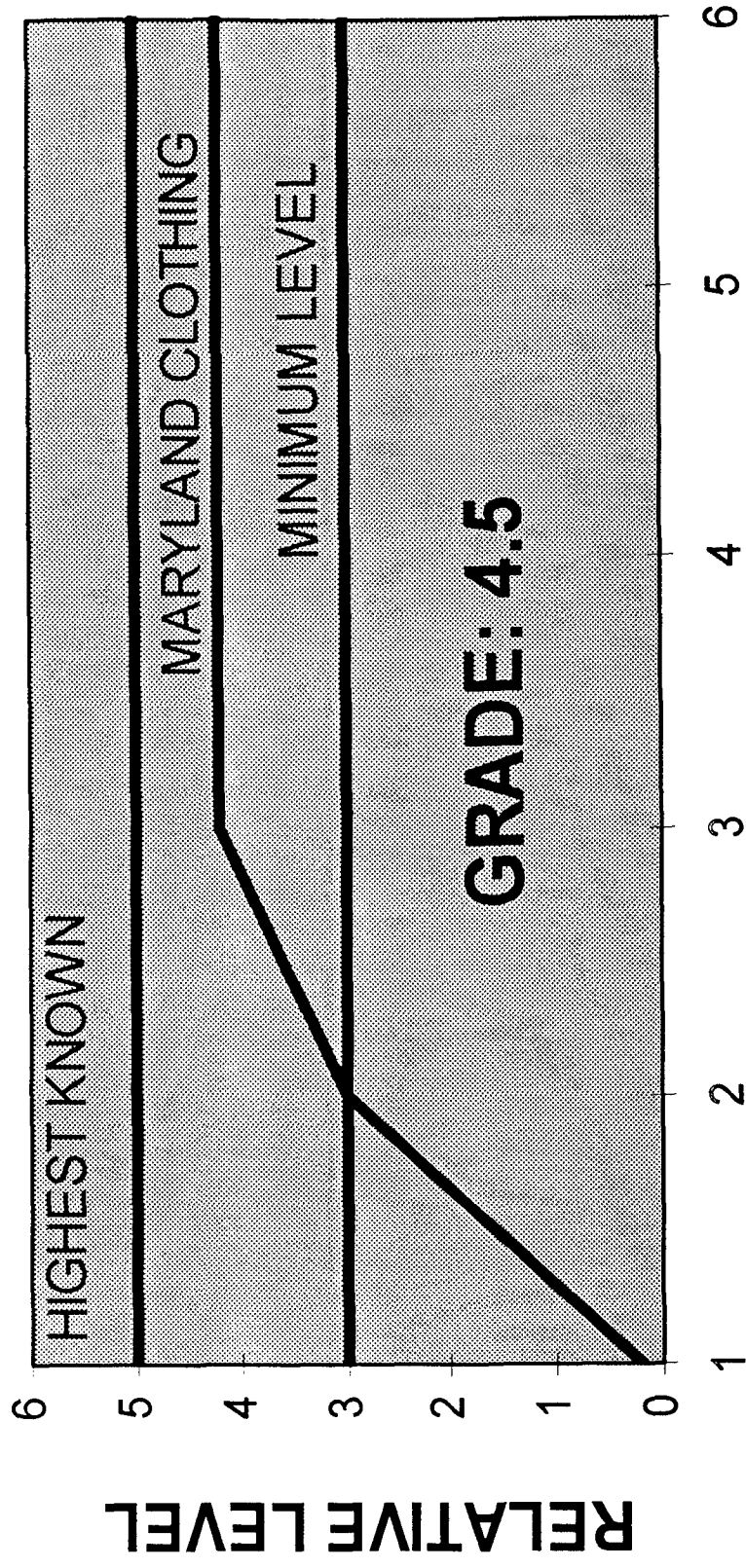
MODULE	GENERIC NAME	TEAM NAME	MEMBERS	OPERATIONS	FIRST OPERATION	LAST OPERATION	SCOPE
2	TEAM 2	ALL "4" ONE	12	14	BOOK SIDE BODY	FINISH LOWER POCKETS	This group start the front bodies along with the side bodies. They are responsible for making & attaching the patch breast pockets plus sewing, cutting in & finishing the lower pockets
3	TEAM 3	MARYLAND'S BEST	12	15	BARTCK LOWER POCKETS	SHAPE FRONTS	This team starts with Bartacking the lower pockets. they are responsible for making & attaching all pocket flaps. They will baste the chest pieces, press & shape the fronts.
4	TEAM 4		13	18	JOIN SIDE SEAMS	MARK POINT & TRIM BOTTOM	This group prepares all backs to be matched & side-seamed to the fronts. They also prepare all body linings which they match to the shells to mark the point & trims the bottom
5	TEAM 5		15	14	SEW EDGE TAPE	FELL LINING	This group tape the edges forms the lapel, tacks, baste & fell the bodies shell & lining including the yoke.
6	TEAM 6		15	26	TRIM SHOULDER LININGS	SET GORE - JOIN COLLAR	This group is responsible for trimming the lining, joining the shoulders, making & attaching the shoulder straps plus making & setting the collar.
5	PHASE I TOTALS		67	87	BOOK SIDE BODY	SET GORE - JOIN COLLAR	Covers body assembly from the beginning of sewing to setting of the collar. All parts are loaded and pre-assemble except for sleeves & shields.

SUMMARY OF PHASE I MODULE SCOPE

MODULE	GENERIC NAME	TEAM NAME	MEMBERS	OPERATIONS	FIRST OPERATION	LAST OPERATION	SCOPE
10	FINISHING	FINISHING TOUCHES	11	6	PULL BASTING	FINAL EXAM	Group is split. The first part pulls the basting stitching. After Pressing the second part adds the buttons, cleans & trims, examine and prepares the coats for auditing.
9	PRESSING	EIGHT IS ENOUGH	8	8	CAROUSEL FINISH PRESS	PRESS FRONT EDGES & LAPEL	Does all final pressing of the coats
8	ASSEMBLY 8	BEST OF TEN	9	8	BASTE ARMHOLES	CLOSE SLEEVE LININGS	Completes the sewing of the coats. This group is responsible for the making of the shield which is added to the coat during armhole basting. this group also finishes the armholes, tacks and closes the lining
7	ASSEMBLY 7	QUALITY EXPERTS	10	11	BASTE UNDERCOLLAR	PRESS ARMHOLE	This group is responsible for making the sleeves sub-assemblies, baste & fell the collar, and sets the sleeves into the coats
4	PHASE I TOTALS		38	33	BASTE UNDERCOLLAR	FINAL EXAM	The back part of the plant. This insures that module work pulls the work out of the plant rather than building up work in the middle of the plant.

EXHIBIT VIII, 1 of 8

TEAM SELECTION PROCESS

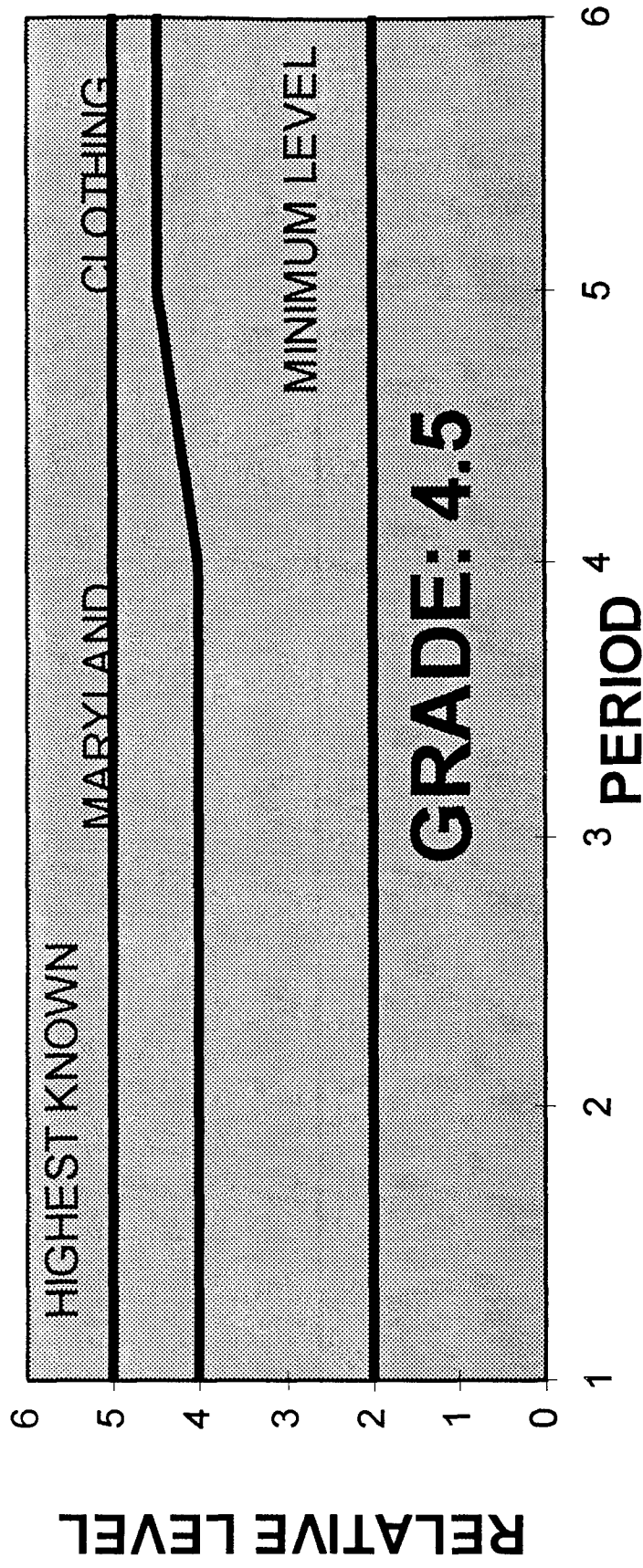


PERIOD

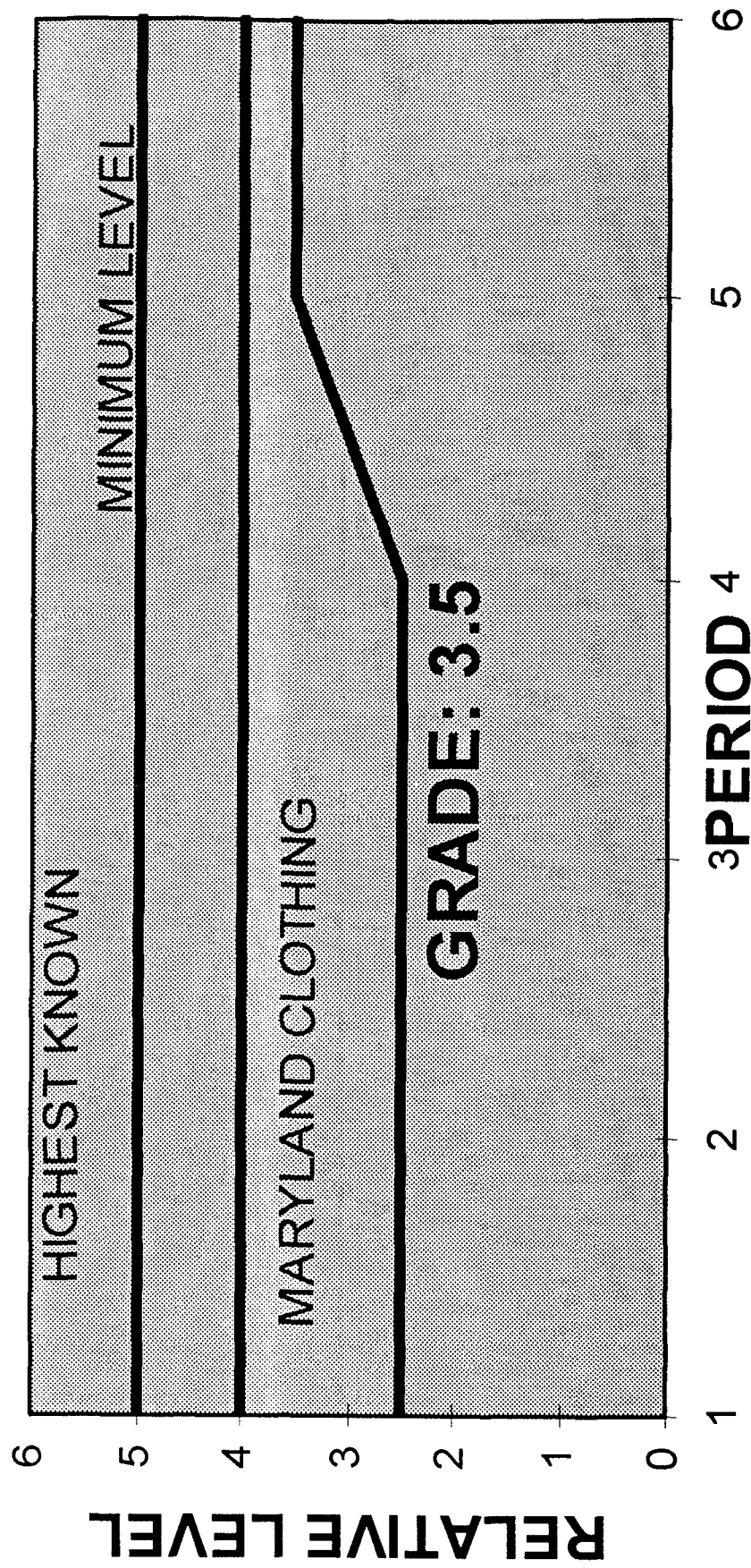
CGA PPFG T1-P1, Final Report

MdPerformance.ppt

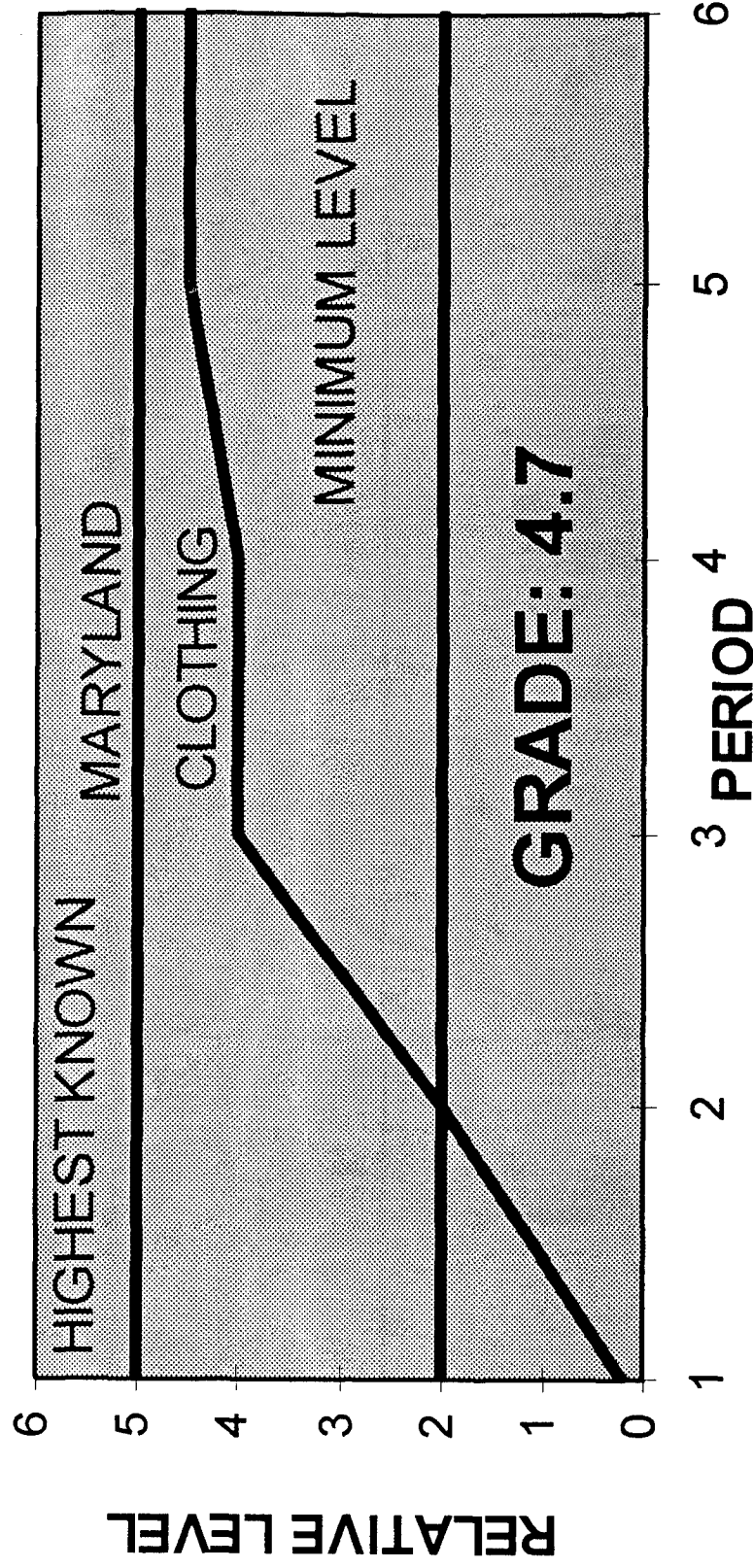
MODULE PLANNING



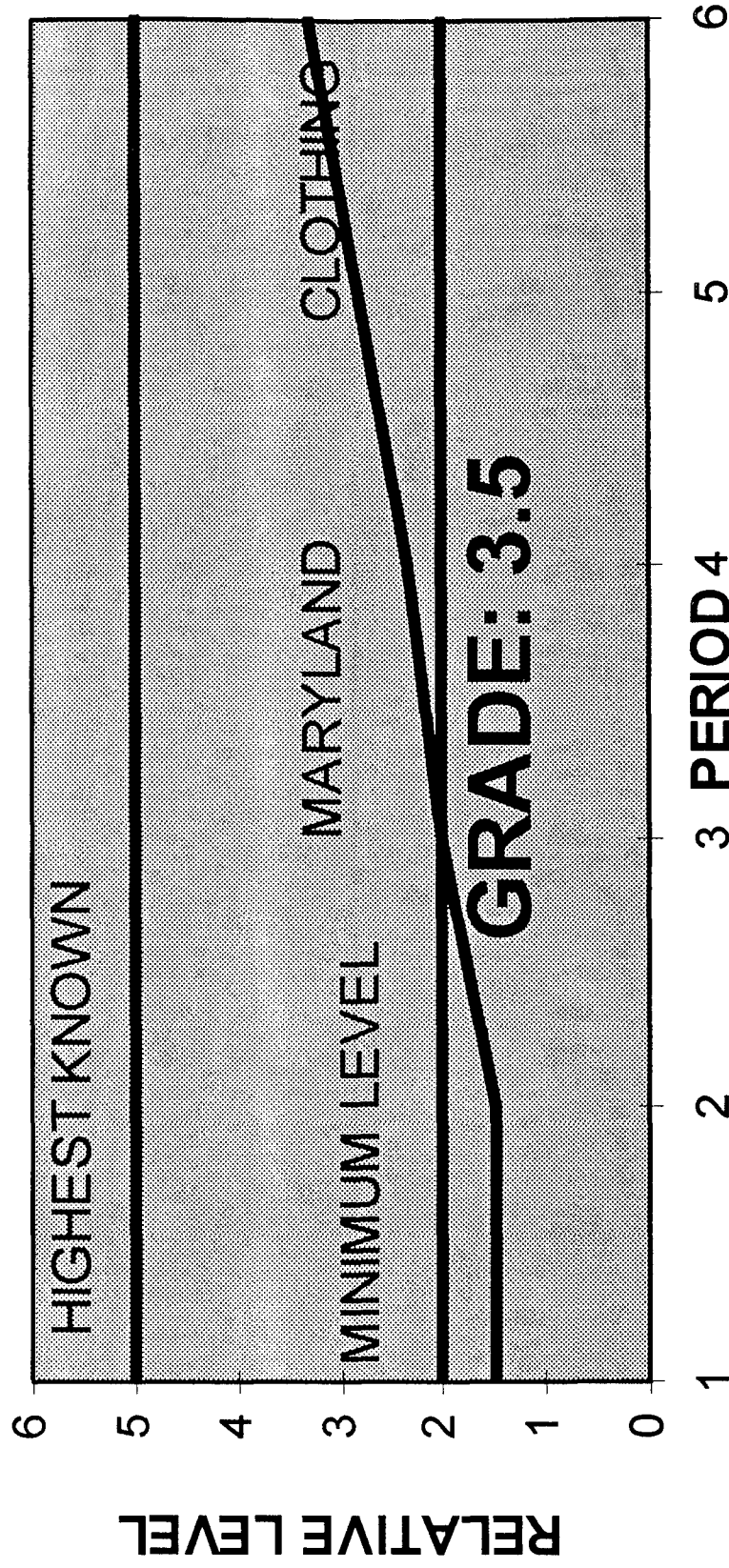
CLASSROOM TRAINING



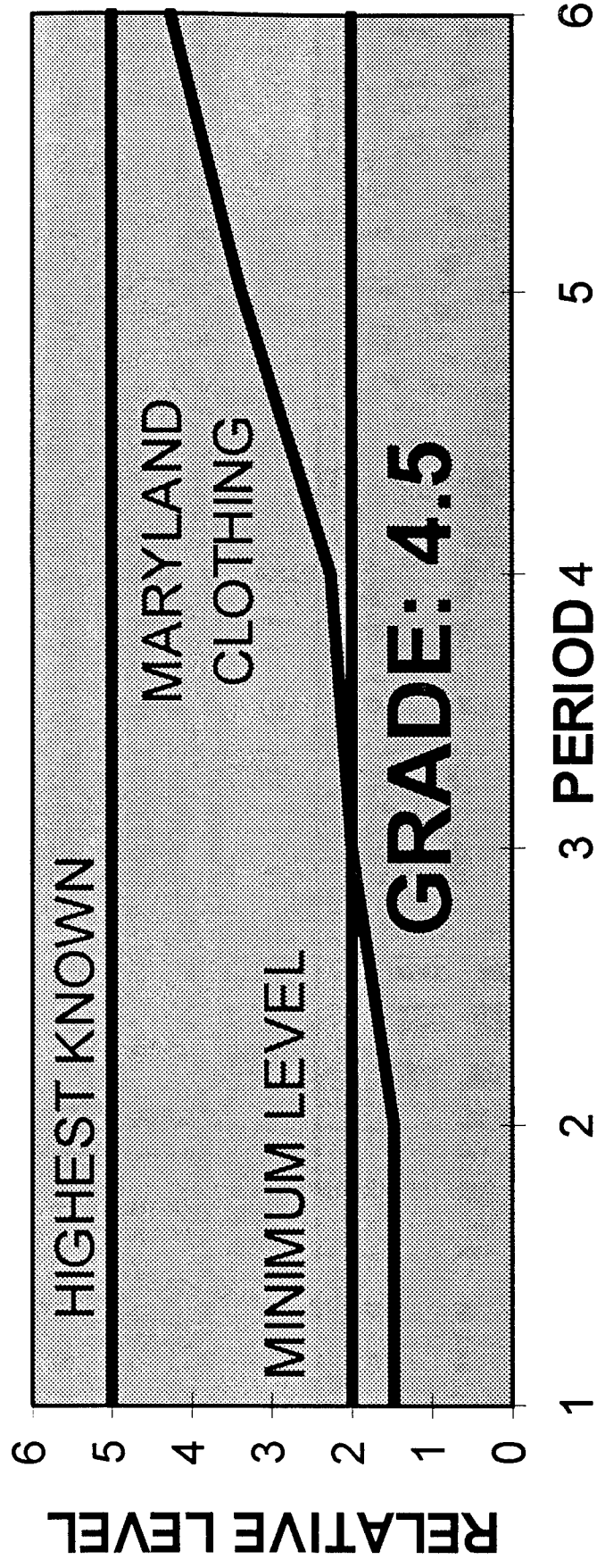
ON-FLOOR FOLLOW-UP



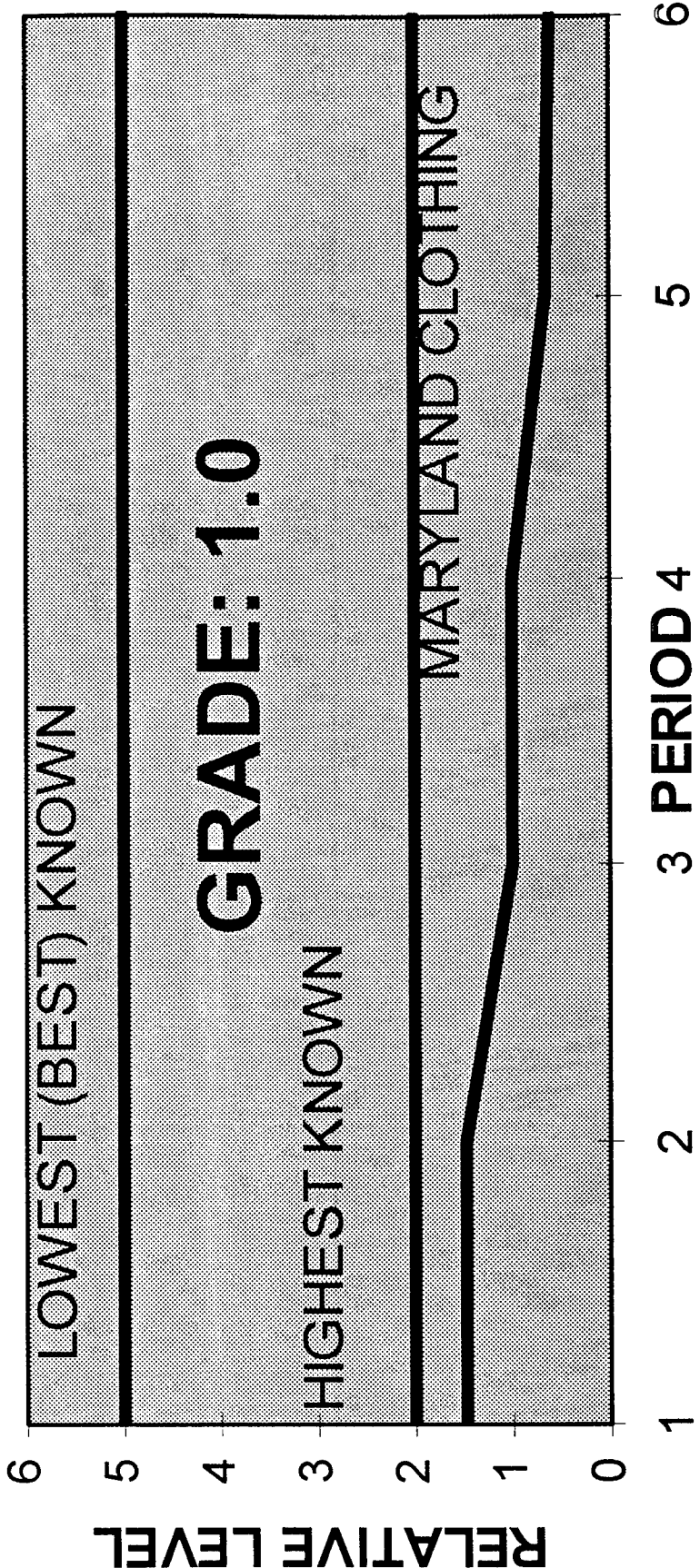
TEAM DEVELOPMENT



LEADERSHIP RESPONSIBILITY



TIME PER MODULE



OVERALL INSTALLATION

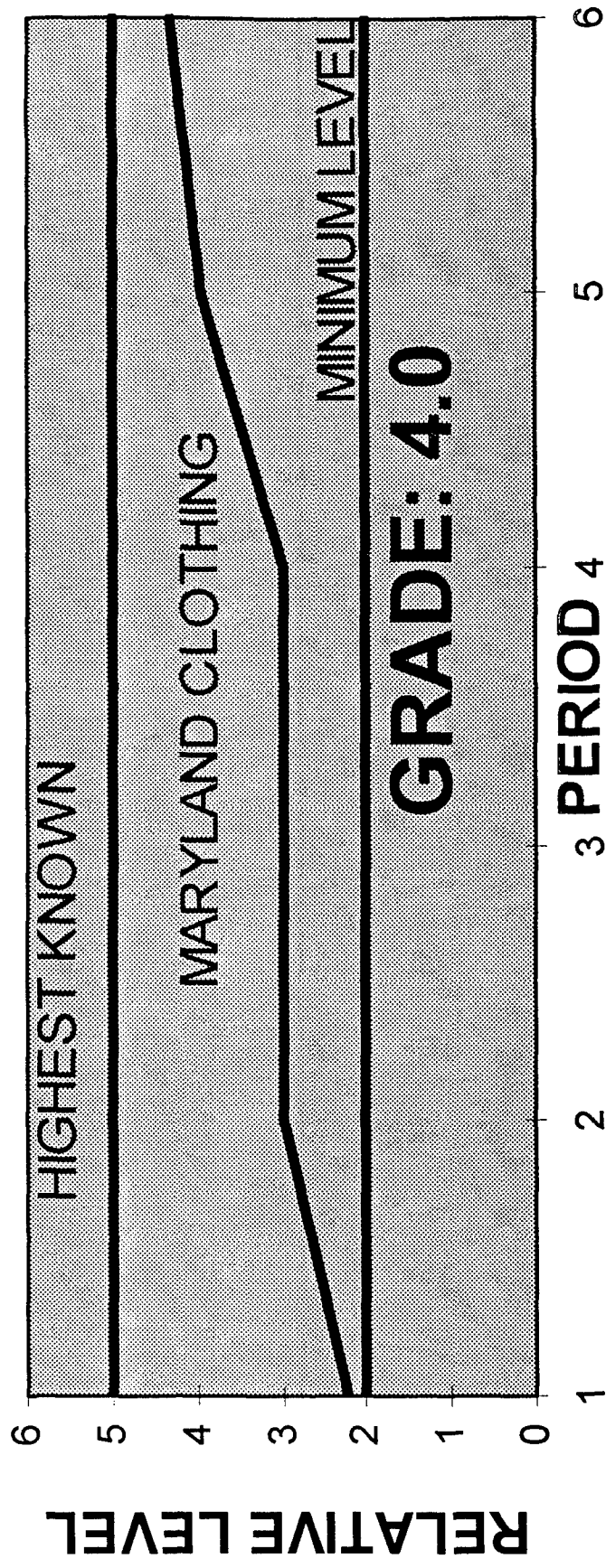
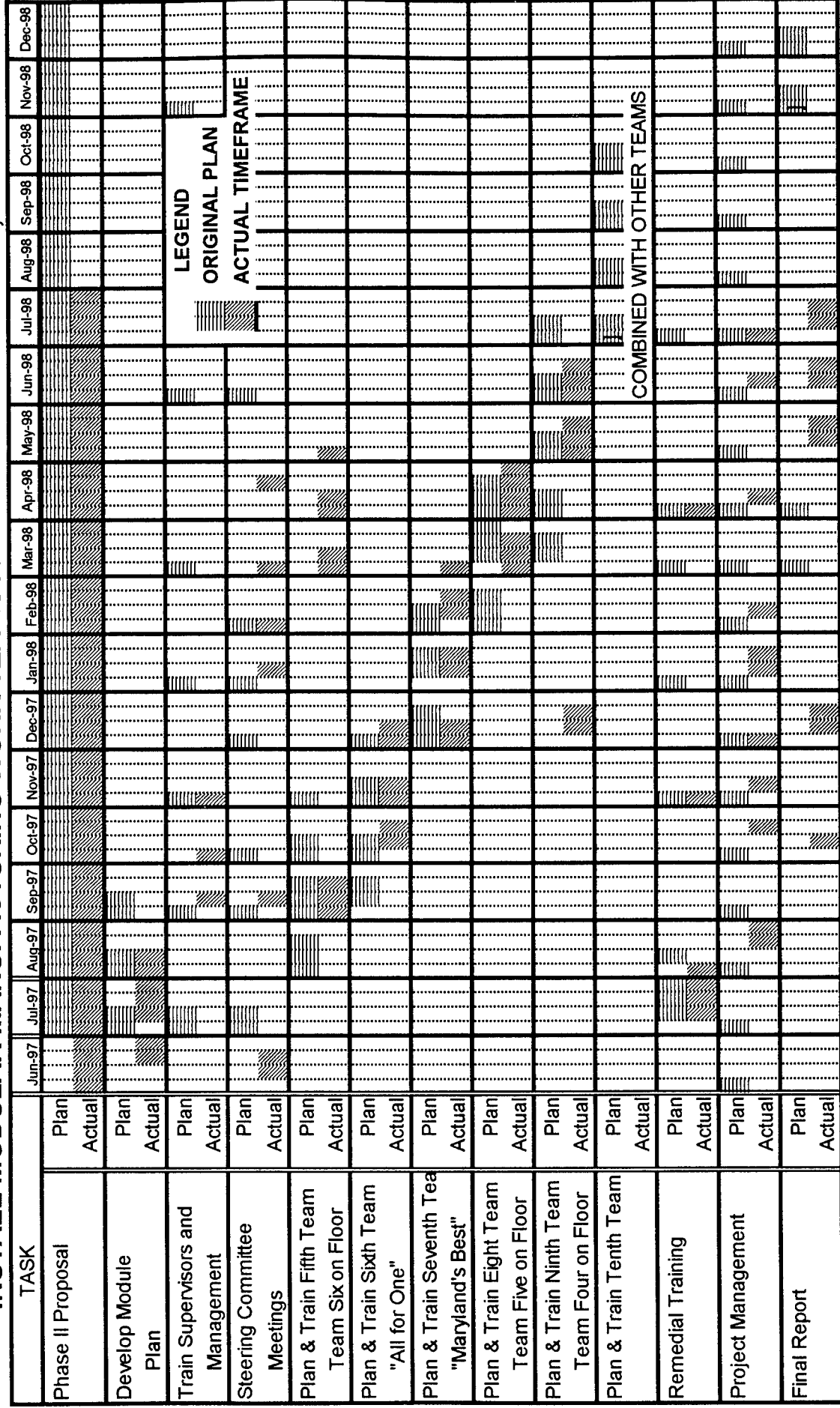


EXHIBIT IX

TIMELINE ANALYSIS, PLANNED VS. ACTUAL
INSTALL MODULAR MANUFACTURING WORK TEAMS AT MARYLAND CLOTHING, PHASE II



INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

EXHIBIT X, pg. 1 of 3

MARYLAND CLOTHING MODULES, PHASE II MANPOWER LOADING DOCUMENT, PART I

TASK	PROJECT PERSONNEL	Jul - Dec 97		Jan.-98		Feb. 98		Mar.-98		Apr-98		May-98		Jun-98		Jul-98		Aug-Dec		COMBINED		PROJECT TOTALS			
		Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act
Plan, St.	R. L. & C. G.	188	50	8		8	8	8		20	0			10	16					220	74	Pl. Supv. Str.	Var.		
Comm. &	P. Stewart	54	124	10	10		15	2		14			10		40					80	200	Plan	Actual	ance	
Supv. Tr	G.P. & G. G.	0	0																	0	0	300	274		26
Plan &	R. Lowder		34																	0	34	Steering Co.	Var.		
Class 5th	P. Stewart	172	152		15															172	188	Plan	Actual	ance	
(2 on Flo	G.P. & G. G.																			0	0	172	202		-30
On-floor	R. Lowder	0	16																	0	16	On-floor 5th	Var.		
Fifth	P. Stewart	120	44		50															120	124	Plan	Actual	ance	
Team	G.P. & G. G.	0	0																	0	0	120	140		-20
Plan &	R. Lowder																			0	0	Plan 5th	Var.		
Class 6	P. Stewart	172	124		10		90													172	194	Plan	Actual	ance	
(3 on Flo	G.P. & G. G.																			0	0	172	194		-22
On-floor	R. Lowder	0	0																	0	0	On-floor 6th	Var.		
Sixth	P. Stewart	90	20	30				68						32						120	120	Plan	Actual	ance	
Team	G.P. & G. G.	0																		0	0	120	120		0
Plan &	R. Lowder																			0	0	Pl. & Class 7	Var.		
Class 7	P. Stewart	44	2	25	8	20	120													88	130	Plan	Actual	ance	
(6 on Flo	G.P. & G. G.	42	42	23	23	18	18		47											83	130	172	260		-88
On-floor	R. Lowder	0	0																	0	0	On-floor 7th	Var.		
Seventh	P. Stewart	0	0	12	12	30	70	34												76	82	Plan	Actual	ance	
Team	G.P. & G. G.	0	0	12	12	30	30	18	30											60	72	136	154		-18
Plan	R. Lowder																			0	0	Plan 8th	Var.		
Team 8	P. Stewart					10		3	13											13	13	Plan	Actual	ance	
(5 on Flo	G.P. & G. G.					11	11													11	11	24	24		0
Class	R. Lowder																			0	0	Class 8th	Var.		
Team 8	P. Stewart					11		47	33	15	41	40	40		32					114	146	Plan	Actual	ance	
(5 on Flo	G.P. & G. G.					10	2	35	9	15	15									60	26	174	172		2
On-floor	R. Lowder																			0	0	On-floor 8th	Var.		
Team 8	P. Stewart							40		80	39				64					120	103	Plan	Actual	ance	
(5 on Flo	G.P. & G. G.							17		43	43									60	43	180	146		34
Plan	R. Lowder																			0	0	Plan 9th	Var.		
Team 9	P. Stewart									15	15									15	15	Plan	Actual	ance	
(4 on Flo	G.P. & G. G.									8	8									8	8	24	24		0
Class	R. Lowder																			0	0	Class 9th	Var.		
Team 9	P. Stewart									60	60	60	60							120	120	Plan	Actual	ance	
(4 on Flo	G.P. & G. G.											88								88	0	208	120		88
On-floor	R. Lowder	0	0																	0	0	On-floor 9th	Var.		
Team 9	P. Stewart	0						40		18	40	30	15		0					96	48	Plan	Actual	ance	
(4 on Flo	G.P. & G. G.	0	0					0			52	66	40	34	52	0				144	100	240	148		92
Remedial	R. Lowder	0	0																	0	0	Remedial	Var.		
Class	P. Stewart	112	142	16				16		2										144	144	Plan	Actual	ance	
Training	G.P. & G. G.	0	0					16									20			36	0	180	144		36
Project	R. Lowder	96	200	16		14	16	40		40	36	40		24		8	0	8		288	252	Project Mgt	Var.		
Management	P. Stewart	0										32								0	32	Plan	Actual	ance	
	G.P. & G. G.	0	0																	0	0	288	284		4
Final	R. Lowder	0	40					8		8		0				24	24			40	64	Final Report	Var.		
Report	P. Stewart	0	0													112				0	112	Plan	Actual	ance	
Phase II	G.P. & G. G.	0	0																	0	0	40	176		-136
TOTALS	R. Lowder	294	340	24	0	22	24	56	0	68	36	40	0	34	16	8	24	32	0	548	440	PROJECT	Var.		
TO	P. Stewart	754	808	93	136	71	256	182	114	186	175	140	172	16	183	0	112	0	0	1482	1752	Plan	Actual	ance	
DATE	G.P. & G. G.	42	42	35	35	69	61	86	86	66	66	140	66	40	34	52	0	20	0	550	390	2550	2582		-32
		Jul-Dec 97		Jan.-98		Feb. 98		Mar.-98		Apr-98		May-98		Jun-98		Jul-98		Aug-Dec		PROJECT					
		Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act	Plan	Act		
MONTHLY TOTALS		1070	990	152	171	162	351	324	200	320	278	320	238	90	218	60	136	62	0	2550	2582				
MONTHLY VARIANCE			80		-19		-189		124		42		82		-128		-76		0						32
PROJECT VARIANCE			80		61		-128		-4		38		120		-8		-84		-84						-32

INSTALL MODULAR MANUFACTURING WORK TEAMS AT A DAM, PHASE II

EXHIBIT X, pg 2 of 3
MARYLAND CLOTHING, BILLING BUDGET VS. ACTUAL
PHASE II

Month	Consultant	Hours Worked		Budgeted Amounts			Actual Amounts			Account Variances			Expense Per Hour		Fees Per Hour	
		Actual	Budget	Fees	Expenses	Total	Fees	Expenses	Total	Fees	Expenses	Total	Actual	Variance	Actual	Variance
Jul-97	Stew	340.0	764.0	\$ 74,632.52	\$ 22,890.20	\$ 97,522.72	\$ 61,715.56	\$ 15,708.16	\$ 76,883.72	\$ 13,676.96	\$ 7,182.04	\$ 20,659.00	\$ 46.20	\$ (16.24)	\$ 179.93	\$ (81.93)
Jul-97	Bob-Charlie	608.0	264.0	\$ 25,865.27	\$ 7,909.70	\$ 33,774.97	\$ 31,741.04	\$ 10,247.64	\$ 41,984.68	\$ (6,881.77)	\$ (2,337.64)	\$ (8,219.71)	\$ 16.85	\$ 13.11	\$ 52.22	\$ 45.76
Dec-97	Gas P.	26.0	22.0	\$ 1,727.00	-	\$ 1,727.00	-	-	-	\$ 1,727.00	-	-	-	-	-	-
Dec-97	Geno G.	16.0	20.0	\$ 560.40	-	\$ 560.40	-	-	-	\$ 560.40	-	-	-	-	-	-
Monthly Total		990.0	1,070.0	\$ 80,225.19	\$ 30,799.90	\$ 111,025.09	\$ 93,456.60	\$ 25,955.80	\$ 118,076.40	\$ 10,822.96	\$ 4,844.41	\$ 14,823.56	\$ 27.38	\$ 2.58	\$ 82.86	\$ 4.11
Aug-97	Stew	136.0	83.0	\$ 8,111.63	\$ 2,768.37	\$ 10,880.00	\$ 13,838.30	\$ 2,699.24	\$ 16,535.54	\$ (4,724.67)	\$ 87.13	\$ (4,637.54)	\$ 19.65	\$ 10.11	\$ 101.74	\$ (3.76)
Aug-97	Bob-Charlie	-	24.0	\$ 2,351.39	\$ 719.06	\$ 3,070.45	-	-	\$ 1,648.50	\$ (235.50)	-	\$ (235.50)	\$ -	\$ -	\$ 76.50	\$ -
Aug-97	Gas P.	21.0	18.0	\$ 1,413.00	-	\$ 1,413.00	\$ 1,448.50	-	\$ 392.28	\$ 94.06	-	\$ 94.06	\$ -	\$ -	\$ 28.02	\$ -
Aug-97	Geno G.	14.0	17.0	\$ 476.34	-	\$ 476.34	\$ 15,877.08	\$ 2,699.24	\$ 18,576.32	\$ (2,524.72)	\$ 806.20	\$ (1,716.53)	\$ 19.85	\$ 10.11	\$ 82.85	\$ 5.13
Monthly Total		171.0	142.0	\$ 13,352.36	\$ 3,505.44	\$ 16,857.80	\$ 15,877.08	\$ 2,699.24	\$ 18,576.32	\$ (2,524.72)	\$ 806.20	\$ (1,716.53)	\$ 19.85	\$ 10.11	\$ 82.85	\$ 5.13
Feb-98	Stew	268.0	71.0	\$ 6,956.19	\$ 2,127.23	\$ 9,083.42	\$ 28,974.84	\$ 6,990.28	\$ 35,965.10	\$ (25,018.65)	\$ (4,863.03)	\$ (26,881.06)	\$ 26.28	\$ 3.66	\$ 106.93	\$ (10.95)
Feb-98	Bob-Charlie	24.0	22.0	\$ 2,155.44	\$ 659.14	\$ 2,814.58	\$ 2,265.80	\$ 2,169.06	\$ 4,434.86	\$ (110.40)	\$ (1,509.82)	\$ (1,620.38)	\$ 90.38	\$ (60.42)	\$ 94.41	\$ 3.56
Feb-98	Gas P.	32.0	40.0	\$ 3,140.00	-	\$ 3,140.00	\$ 2,512.00	-	\$ 2,512.00	\$ 628.00	-	\$ 628.00	\$ -	\$ -	\$ 78.50	\$ -
Feb-98	Geno G.	29.0	29.0	\$ 812.58	-	\$ 812.58	\$ 812.58	-	\$ 812.58	-	-	-	\$ -	\$ -	\$ 28.02	\$ 0.00
Monthly Total		353.0	102.0	\$ 13,064.21	\$ 2,786.37	\$ 15,850.58	\$ 34,565.32	\$ 9,159.32	\$ 43,724.64	\$ (21,560.11)	\$ (6,372.85)	\$ (27,874.06)	\$ 31.38	\$ (1.62)	\$ 98.48	\$ (0.50)
Mar-98	Stew	114.0	182.0	\$ 17,631.36	\$ 5,452.90	\$ 23,084.26	\$ 11,998.08	\$ 3,168.87	\$ 14,764.95	\$ 6,233.28	\$ 2,289.03	\$ 8,519.31	\$ 27.78	\$ 2.18	\$ 101.74	\$ (3.76)
Mar-98	Bob-Charlie	-	56.0	\$ 5,488.57	\$ 1,677.82	\$ 7,166.39	-	-	\$ -	\$ 5,488.57	\$ 1,677.82	\$ 7,166.39	\$ -	\$ -	\$ 78.50	\$ -
Mar-98	Gas P.	50.0	86.0	\$ 6,751.00	-	\$ 6,751.00	\$ 3,925.00	-	\$ 3,925.00	\$ 2,826.00	-	\$ 2,826.00	\$ -	\$ -	\$ 28.02	\$ -
Mar-98	Geno G.	36.0	-	\$ -	-	\$ -	\$ 1,004.72	-	\$ 1,004.72	\$ (1,008.72)	-	\$ (1,008.72)	\$ -	\$ -	\$ 28.02	\$ -
Monthly Total		200.0	324.0	\$ 30,065.93	\$ 7,130.72	\$ 37,196.65	\$ 16,531.80	\$ 3,168.87	\$ 19,698.67	\$ 13,537.13	\$ 3,965.85	\$ 17,500.88	\$ 27.78	\$ 2.18	\$ 82.86	\$ 15.32
Apr-98	Stew	176.0	166.0	\$ 18,233.26	\$ 5,572.75	\$ 23,796.00	\$ 17,903.61	\$ 2,893.98	\$ 20,797.59	\$ 319.45	\$ 2,678.67	\$ 2,968.31	\$ 18.44	\$ 13.52	\$ 101.73	\$ (3.75)
Apr-98	Bob-Charlie	36.0	66.0	\$ 6,062.27	\$ 2,037.35	\$ 8,099.61	\$ 3,400.65	\$ 2,146.39	\$ 5,549.24	\$ 3,261.42	\$ (111.04)	\$ 3,150.37	\$ 59.66	\$ (29.72)	\$ 94.47	\$ 3.51
Apr-98	Gas P.	30.0	66.0	\$ 5,181.00	-	\$ 5,181.00	\$ 2,355.00	-	\$ 2,355.00	\$ 2,826.00	-	\$ 2,826.00	\$ -	\$ -	\$ 78.50	\$ -
Apr-98	Geno G.	36.0	-	\$ -	-	\$ -	\$ 1,008.72	-	\$ 1,008.72	\$ (1,008.72)	-	\$ (1,008.72)	\$ -	\$ -	\$ 28.02	\$ -
Monthly Total		278.0	328.0	\$ 30,065.93	\$ 7,610.09	\$ 37,676.02	\$ 24,668.38	\$ 5,042.27	\$ 30,710.65	\$ 3,398.14	\$ 2,567.92	\$ 7,965.87	\$ 23.78	\$ 6.18	\$ 88.74	\$ 9.24
May-98	Stew	172.0	140.0	\$ 13,716.43	\$ 4,194.54	\$ 17,910.97	\$ 16,475.53	\$ 2,613.47	\$ 21,289.00	\$ (4,739.10)	\$ 1,387.67	\$ (3,378.03)	\$ 16.36	\$ 13.60	\$ 107.42	\$ (9.44)
May-98	Bob-Charlie	40.0	40.0	\$ 3,918.98	\$ 1,198.44	\$ 5,117.42	-	-	\$ 3,918.98	\$ 1,198.44	-	\$ 3,918.98	\$ -	\$ -	\$ 78.50	\$ -
May-98	Gas P.	30.0	80.0	\$ 6,280.00	-	\$ 6,280.00	\$ 2,355.00	-	\$ 2,355.00	\$ 3,925.00	-	\$ 3,925.00	\$ -	\$ -	\$ 28.02	\$ -
May-98	Geno G.	36.0	60.0	\$ 1,681.20	-	\$ 1,681.20	\$ 1,004.72	-	\$ 1,004.72	\$ 672.48	-	\$ 672.48	\$ -	\$ -	\$ 28.02	\$ -
Monthly Total		278.0	320.0	\$ 25,596.61	\$ 5,392.98	\$ 30,989.59	\$ 21,839.75	\$ 2,613.47	\$ 24,453.22	\$ 3,757.38	\$ 2,578.61	\$ 6,335.97	\$ 16.36	\$ 13.60	\$ 91.76	\$ 6.21
Jun-98	Stew	168.0	16.0	\$ 1,567.59	\$ 479.38	\$ 2,046.97	\$ 18,300.80	\$ 3,634.39	\$ 21,935.19	\$ (16,733.21)	\$ (3,155.01)	\$ (19,888.22)	\$ 21.63	\$ 8.33	\$ 108.93	\$ (10.96)
Jun-98	Bob-Charlie	16.0	34.0	\$ 3,311.13	\$ 1,018.67	\$ 4,329.81	\$ 1,115.60	\$ 1,129.88	\$ 2,245.48	\$ 2,215.53	\$ (111.21)	\$ 2,104.33	\$ 70.82	\$ (40.66)	\$ 69.73	\$ 28.25
Jun-98	Gas P.	16.0	24.0	\$ 1,984.00	-	\$ 1,984.00	\$ 1,264.00	-	\$ 1,264.00	\$ 628.00	-	\$ 628.00	\$ -	\$ -	\$ 78.50	\$ -
Jun-98	Geno G.	18.0	16.0	\$ 448.32	-	\$ 448.32	\$ 504.36	-	\$ 504.36	\$ (56.04)	-	\$ (56.04)	\$ -	\$ -	\$ 28.02	\$ -
Monthly Total		218.0	60.0	\$ 7,221.06	\$ (496.05)	\$ 6,725.01	\$ 21,136.76	\$ 4,794.27	\$ 25,941.03	\$ (13,845.72)	\$ (3,296.22)	\$ (17,211.54)	\$ 25.86	\$ 4.07	\$ 97.14	\$ 0.63
Jul-98	Stew	112.0	-	\$ -	-	\$ -	\$ 11,394.61	\$ 605.00	\$ 11,999.61	\$ (11,394.61)	\$ (605.00)	\$ (11,999.61)	\$ 5.40	\$ 24.56	\$ 101.74	\$ (3.76)
Jul-98	Bob-Charlie	24.0	8.0	\$ 783.80	\$ 229.89	\$ 1,013.69	\$ 3,777.50	\$ 988.00	\$ 4,765.50	\$ (2,982.70)	\$ (728.31)	\$ (3,722.02)	\$ 40.38	\$ (10.41)	\$ 157.55	\$ (59.38)
Jul-98	Gas P.	-	8.0	\$ 706.50	-	\$ 706.50	-	-	\$ 706.50	\$ -	-	\$ 706.50	\$ -	\$ -	\$ -	\$ -
Jul-98	Geno G.	-	43.0	\$ 1,204.88	-	\$ 1,204.88	-	-	\$ 1,204.88	\$ -	-	\$ 1,204.88	\$ -	\$ -	\$ -	\$ -
Monthly Total		136.0	60.0	\$ 2,055.18	\$ 229.89	\$ 2,285.07	\$ 15,172.11	\$ 1,574.80	\$ 16,746.91	\$ (12,715.96)	\$ (1,334.31)	\$ (13,810.27)	\$ 11.87	\$ 18.39	\$ 111.55	\$ (13.58)
Aug-98	Stew	-	-	\$ -	-	\$ -	-	-	\$ -	-	-	\$ -	\$ -	\$ -	\$ -	\$ -
Aug-98	Bob-Charlie	-	32.0	\$ 3,135.18	\$ 958.75	\$ 4,093.94	-	-	\$ -	\$ 3,135.18	\$ 958.75	\$ 4,093.94	\$ -	\$ -	\$ -	\$ -
Aug-98	Gas P.	-	-	\$ -	-	\$ -	-	-	\$ -	\$ -	-	\$ -	\$ -	\$ -	\$ -	\$ -
Aug-98	Geno G.	-	20.0	\$ 560.40	-	\$ 560.40	-	-	\$ -	\$ 560.40	-	\$ 560.40	\$ -	\$ -	\$ -	\$ -
Monthly Total		-	-	\$ 3,695.58	\$ 958.75	\$ 4,654.34	\$ -	\$ -	\$ -	\$ 3,695.58	\$ 958.75	\$ 4,654.34	\$ -	\$ -	\$ -	\$ -
Project Total		1,580.0	1,580.0	\$ 142,256.87	\$ 43,503.37	\$ 185,760.25	\$ 181,869.53	\$ 38,511.27	\$ 220,170.80	\$ (39,400.50)	\$ 4,992.10	\$ (34,402.45)	\$ 25.95	\$ 4.01	\$ 122.41	\$ (24.44)
Actual Total		799.0	546.0	\$ 57,980.03	\$ 16,418.63	\$ 74,398.66	\$ 70,108.65	\$ 42,266.89	\$ 112,375.54	\$ (3,288.79)	\$ (245.34)	\$ (11,338.79)	\$ 23.54	\$ 6.42	\$ 59.75	\$ 38.22
Gas P. Total		226.0	346.0	\$ 27,082.50	-	\$ 27,082.50	\$ 16,002.50	-	\$ 16,002.50	\$ 10,980.00	-	\$ 10,980.00	\$ -	\$ -	\$ 78.50	\$ -
Geno G. Total		186.0	250.0	\$ 5,744.10	-	\$ 5,744.10	\$ 5,183.70	-	\$ 5,183.70	\$ 500.40	-	\$ 500.40	\$ -	\$ -	\$ 28.02	\$ -
Monthly Total		1,981.0	2,580.0	\$ 228,775.66	\$ 59,922.00	\$ 288,697.66	\$ 245,241.02	\$ 53,775.24	\$ 300,416.26	\$ (28,014.42)	\$ 4,746.76	\$ (23,267.66)	\$ 25.17	\$ 4.79	\$ 94.98	\$ 2.89

EXHIBIT X, pg. 3 of 3

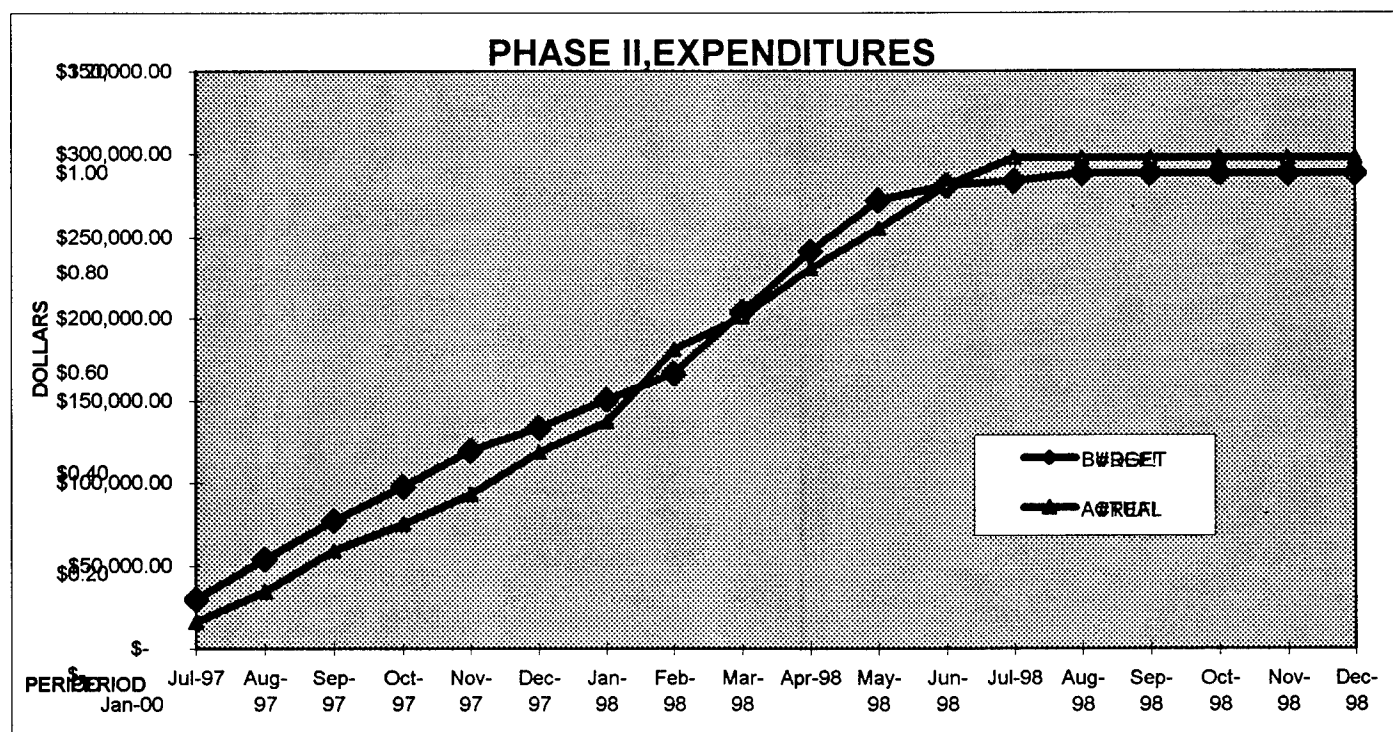
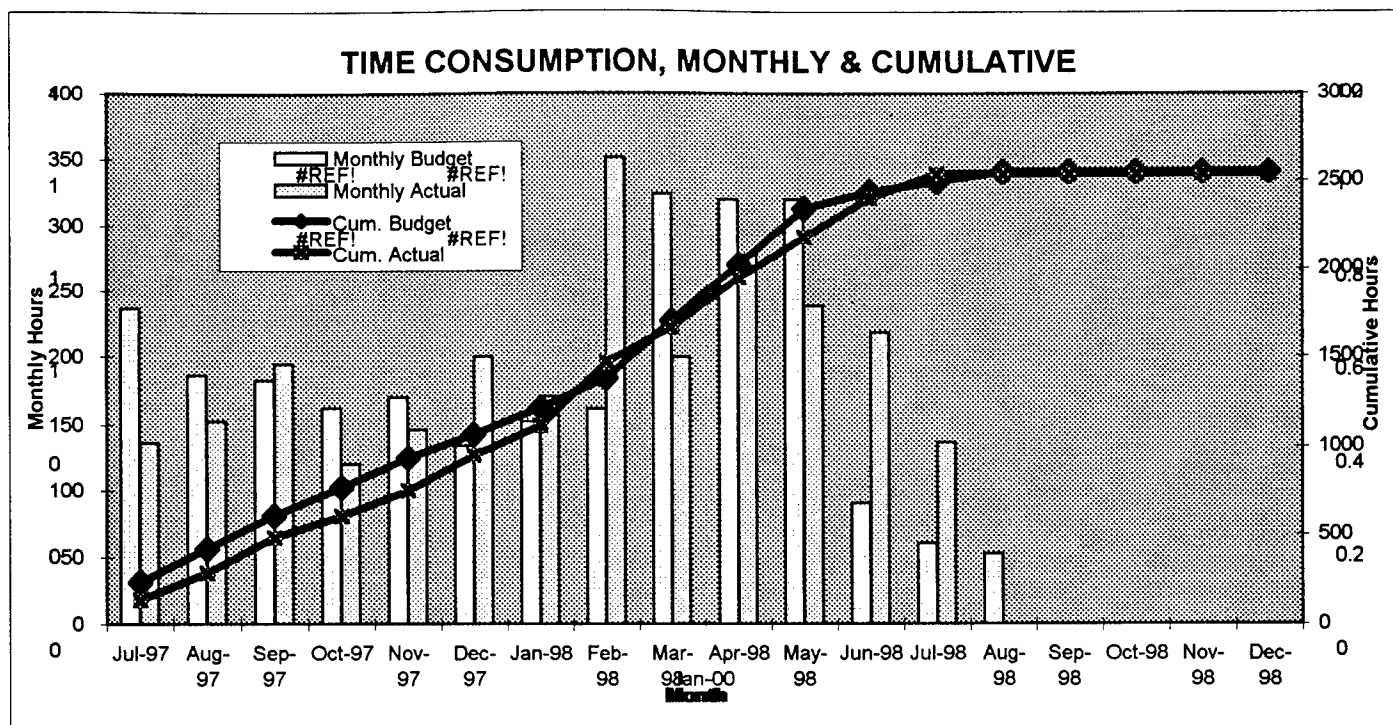


EXHIBIT XII,ii
Team 2, Maryland Clothing

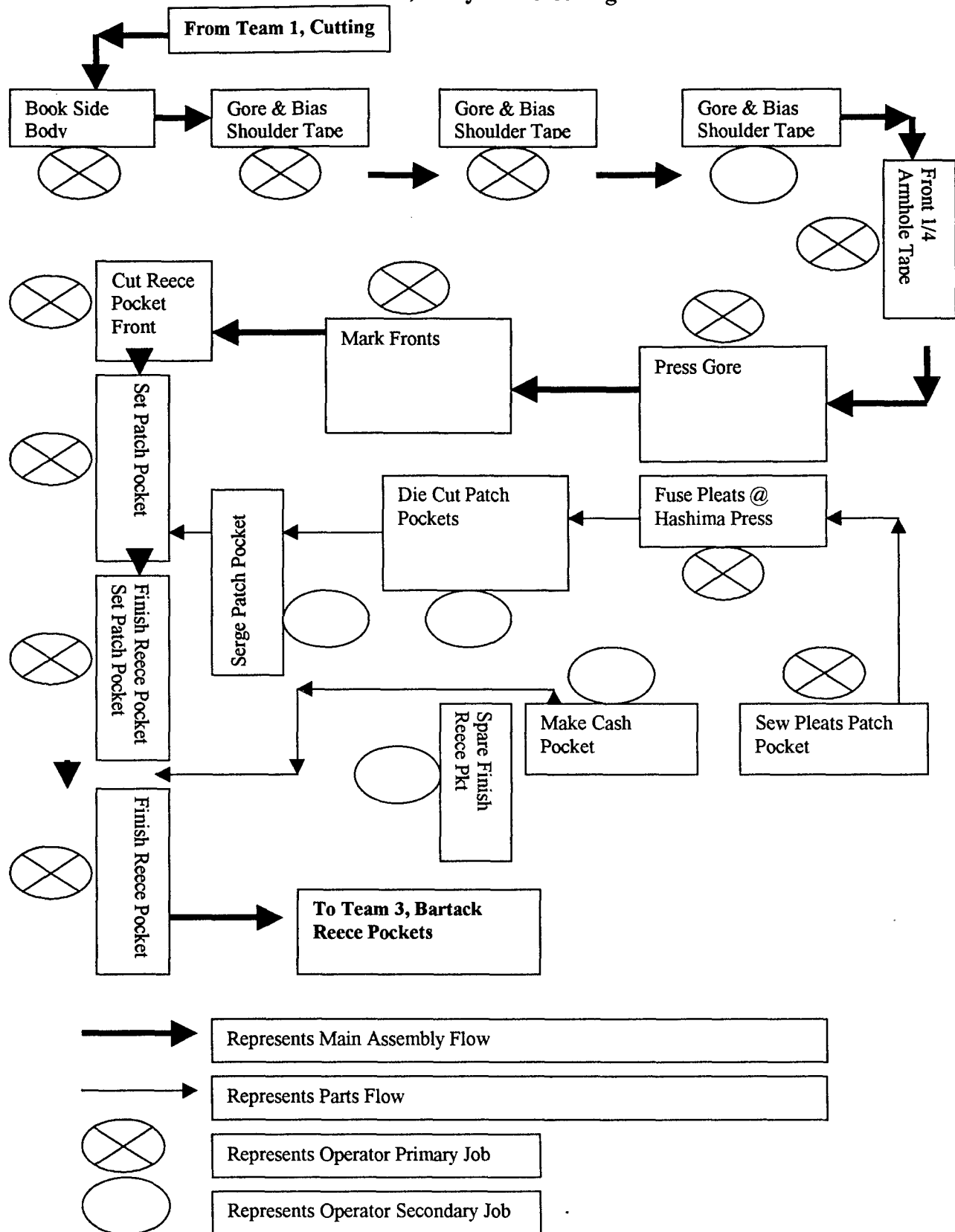


EXHIBIT XII, iii
Team 3, Maryland Clothing

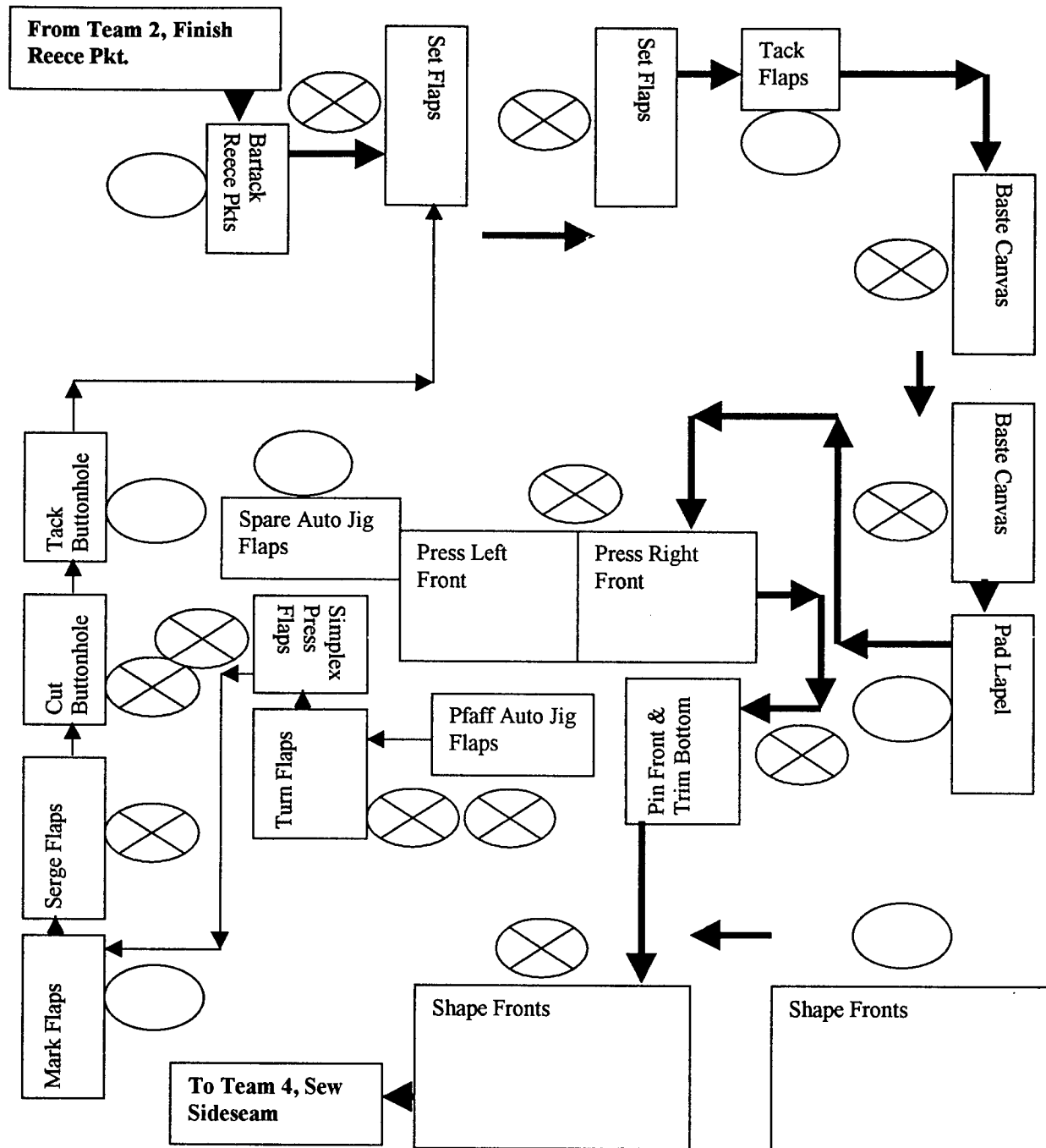
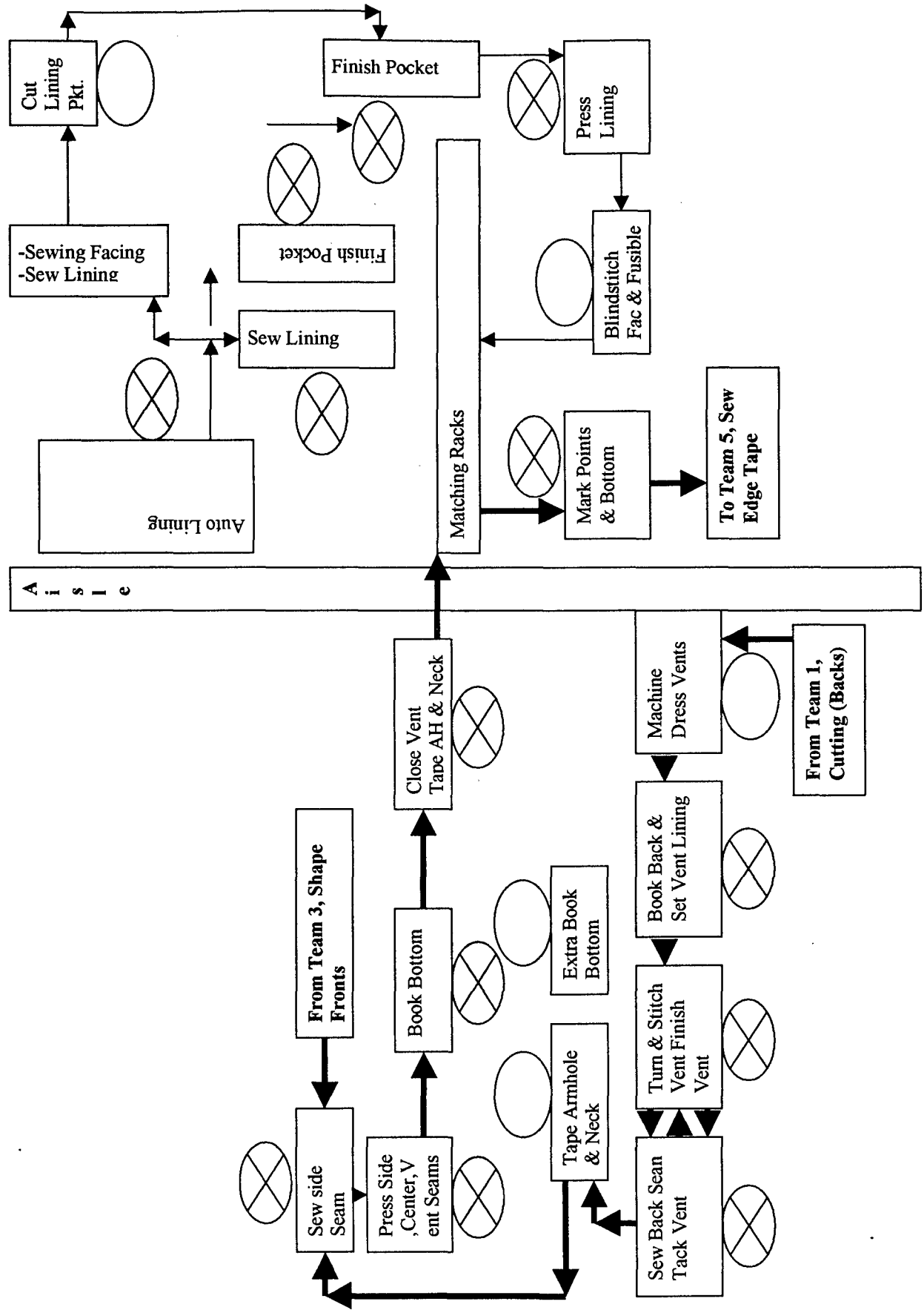


EXHIBIT XII, iv
Team 4, Maryland Clothing



Team 5, Maryland Clothing



EXHIBIT XII, vi
Team 6, Maryland Clothing

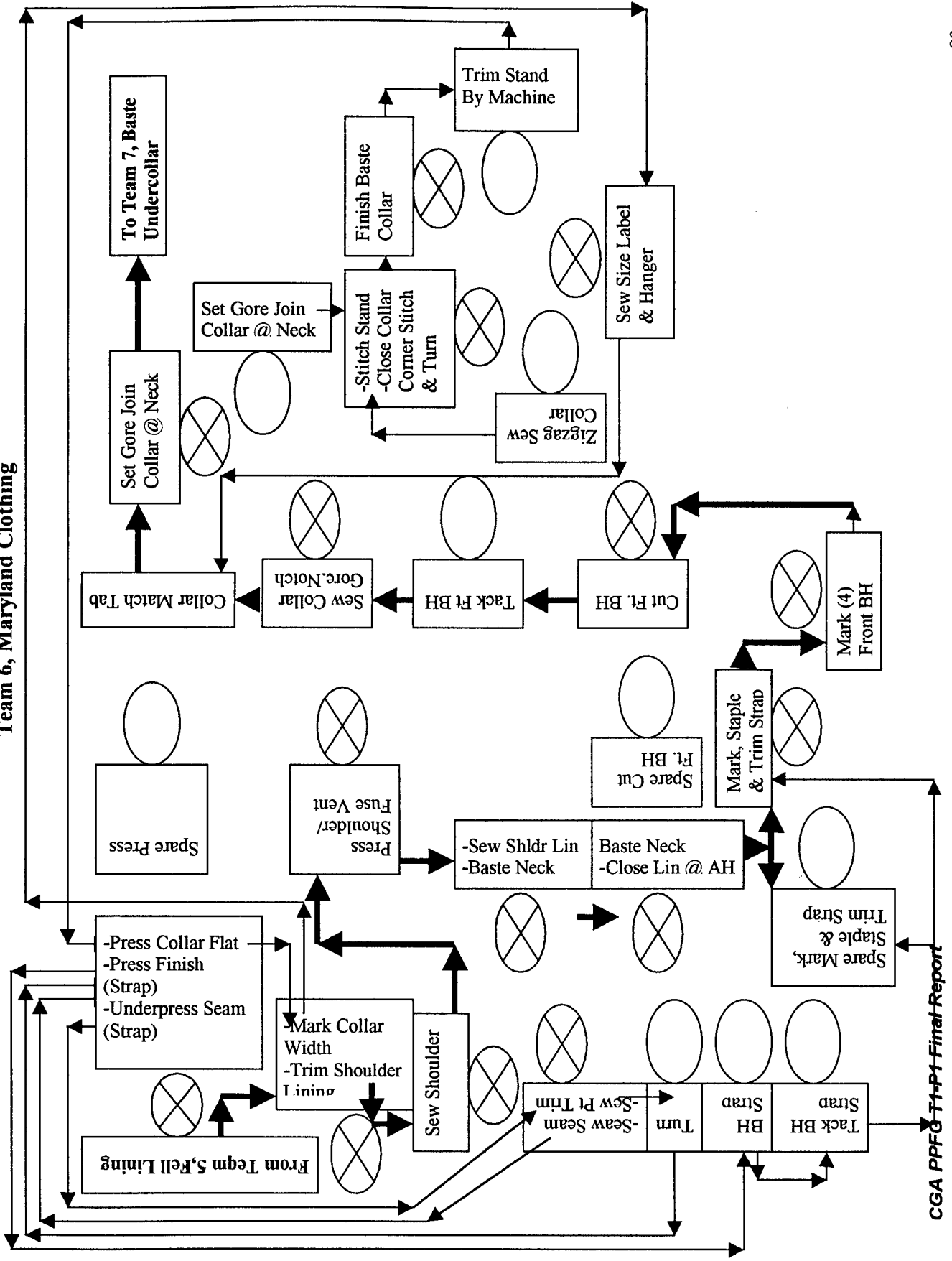


EXHIBIT XII, vii
Team 7, Maryland Clothing

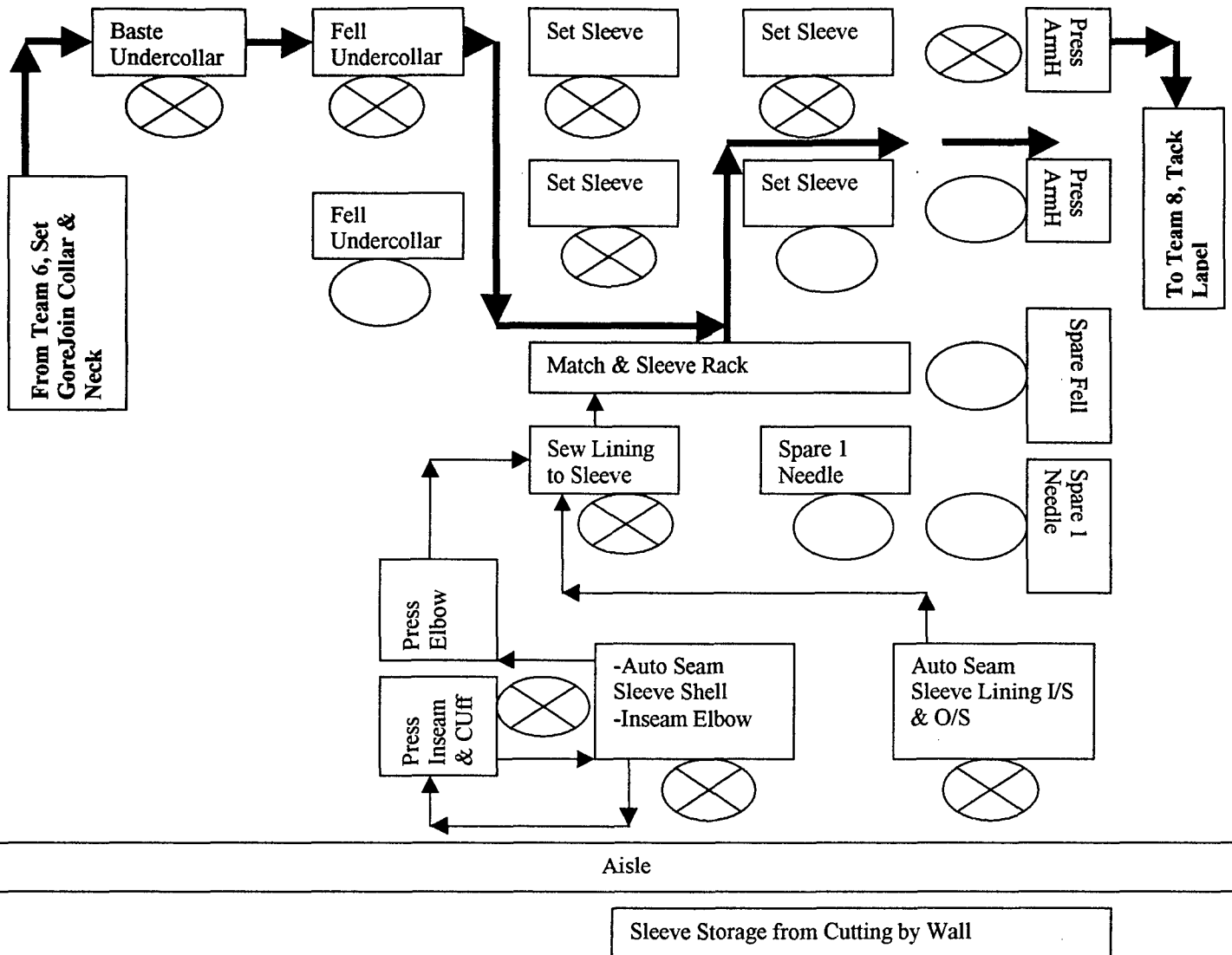


EXHIBIT XII, viii
Team 8, Maryland Clothing

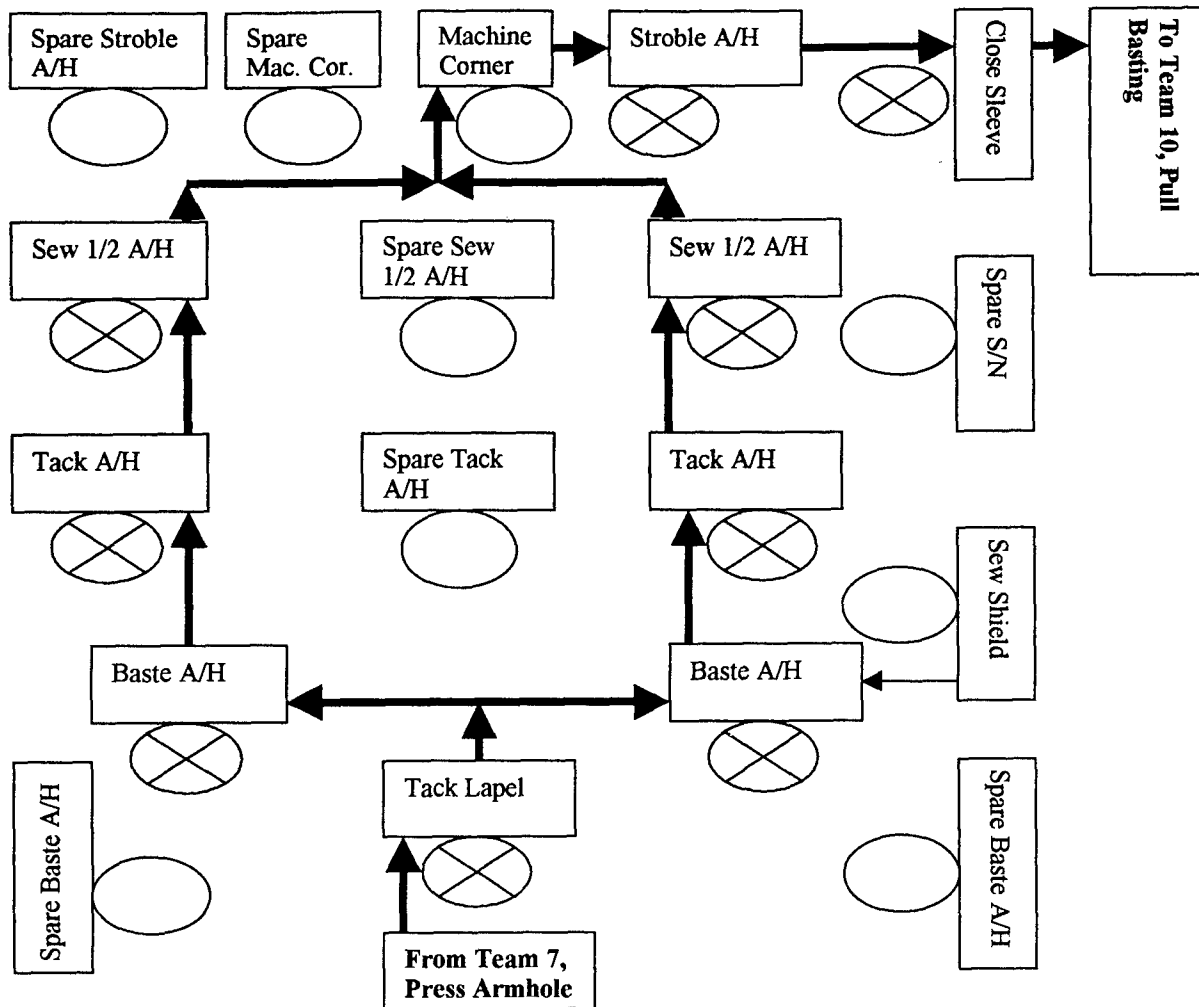


EXHIBIT XII, ix

Team 9, Maryland Clothing

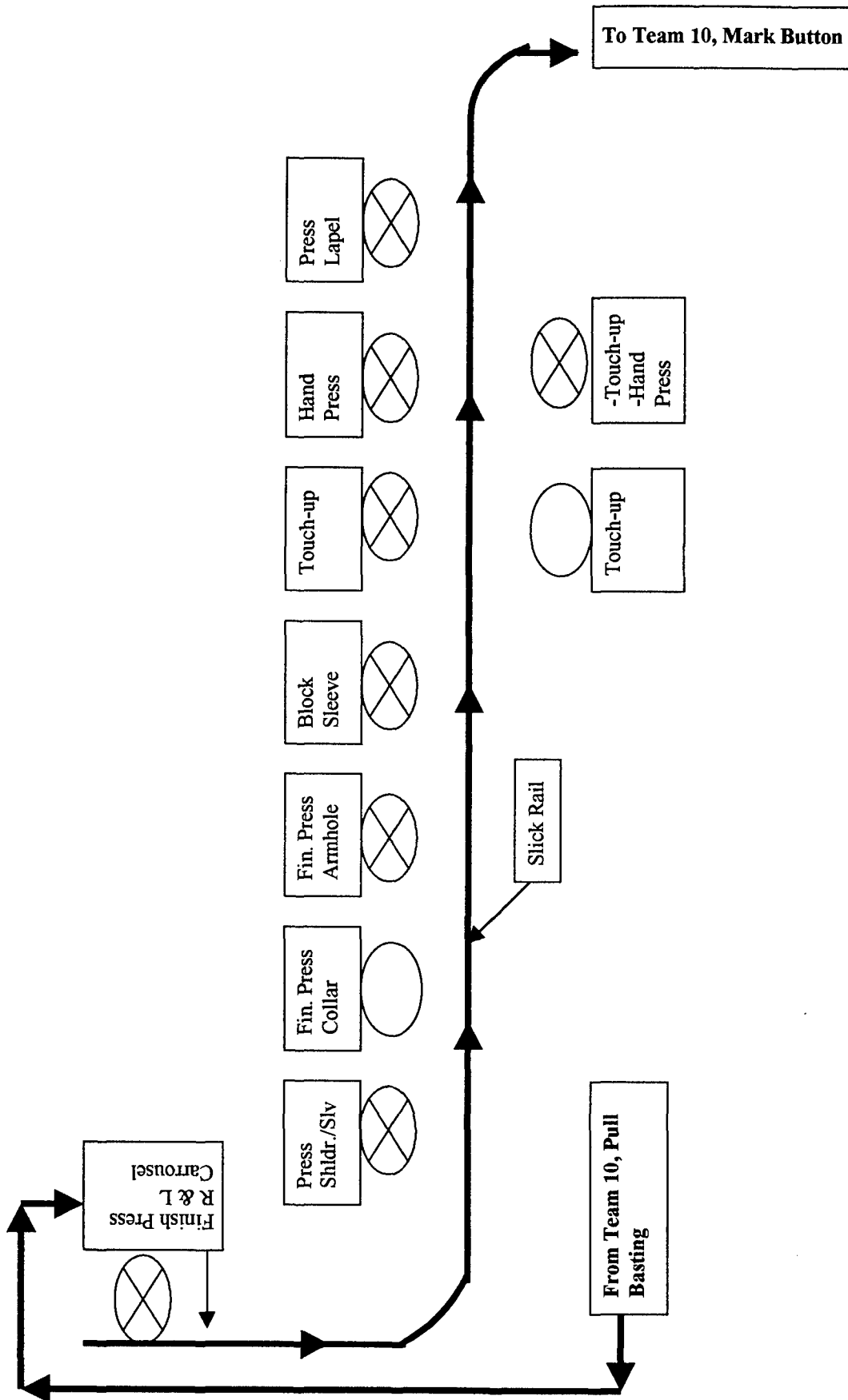


EXHIBIT XII, x
Team 10, Maryland Clothing

